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Client	**Drainage Services Department**		
Project	**Contract No. DC/2007/24 Harbour Area Treatment Scheme Stage 2A Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun**		
Document Title	**Monthly Environmental Monitoring and Audit Report No. 49 Covering the Period from 1 January 2014 to 31 January 2014**		
Document No.	**EMA/063**		

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Revision History

Rev.	Date	Description	Prepared	Checked & Reviewed	Approved
B	13 February 2014	Submission to IEC and ER for further review	Various	Sharifah Or	Eric Chui
A	13 February 2014	Submission to IEC and ER for review	Various	Sharifah Or	Eric Chui

LEIGHTON 仁和 LNS Leighton - LNS Joint Venture ATKINS

Rev. B

Contract No. DC/2007/24
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Environmental Certification Sheet – 67

Reference ~~Procedure~~/Document/~~Plan~~

Document/~~Plan/Changes/Information to be~~ Certified/ Verified:	Monthly Environmental Monitoring and Audit Report No.49 (EMA/063, Rev B)
Date of Report:	13 February 2014
Date of correspondence to IEC:	13 February 2014
Date received:	13 February 2014

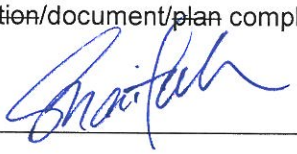
Reference Condition

Clause 4.4 of EP-322/2008/F:

"Three hard copies and one electronic copy of the monthly EM&A Report shall be submitted to the Director within 10 working days after the end of the reporting month. The EM&A Reports shall include a summary of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels). The submissions shall be verified by the IEC. Additional copies of the submission shall be provided to the Director upon request by the Director."

ET Certification

I hereby certify that the above referenced ~~information~~/document/~~plan~~ complies with the above referenced condition.

Sharifah Or, Environmental Team Leader, (ACL):  Date: 17 February 2014

Our ref KMY/AFK/MR/TK/fk/T261332/22.01/L-0685
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Your ref -

Mott MacDonald

CE/Harbour Area Treatment Scheme
Drainage Services Department
Sewage Services Branch
Harbour Area Treatment Scheme Division
5/F, Western Magistracy
2A Pokfulam Road, Hong Kong

14 February 2014
By Post

Attn: Mr. Danny Tang

Dear Sir,

Agreement No. CE 8/2009(EP)
Harbour Area Treatment Scheme (HATS) Stage 2A
Independent Environmental Checker for Construction Phase – Investigation

Contract No. DC/2007/24
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun
Condition 4.4 – Submission of Monthly EM&A Report for January 2014 (no. 49)

I refer to the revised Monthly EM&A Report No. 49 (Rev. B) for January 2014 certified by ETL and received on 13 February 2014 via email. Pursuant to Condition 4.4 of Environmental Permit No. EP-322/2008/F, I hereby verify the captioned Report.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne F Kerr
Independent Environmental Checker

c.c.	AECOM	Mr. Hung Jennings	By email
	Leighton – LNS JV	Mr. Tony Pink	By email
	Atkins	Ms. Susana Halliday	By email

EXECUTIVE SUMMARY

This is the Forty-ninth Monthly Environmental Monitoring and Audit Report prepared by Atkins China Ltd (ACL), for Contract No. DC/2007/24 Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun (hereinafter, the Project), in compliance with the Project EM&A Manual under EP No. EP-322/2008/F. The construction works under the Project was commenced on 23 December 2009. This report summarises the findings and results of the EM&A during the reporting period from 1 January 2014 to 31 January 2014.

Environmental Monitoring and Audit Progress

The monthly EM&A programme has been undertaken in accordance with the Project EM&A Manual. A summary of the monitoring activities carried out during this reporting month is listed below:

Noise and air monitoring at designated monitoring stations was undertaken as below table:

Parameter	ID	Description	Date
Noise Monitoring: $L_{eq(30\ mins)}$ during normal Daytime	M3	Kwan Yick Building Phase III	10, 16, 22 and 28 January 2014 (1)
	M5	Chuk Lam Ming Tong	2, 9, 13, 23 and 28 January 2014
	M6a	Aegean Terrace	7, 14, 20 and 28 January 2014
	M7a	Wah Ming House	9, 14, 20 and 29 January 2014
	M8	Wah Lai House	2, 7, 13, 23 and 29 January 2014
Noise Monitoring: $L_{eq(15\ mins)}$ during evening time and daytime of Sundays/ public holidays	M3	Kwan Yick Building Phase III	5 and 19 January 2013(1)
Noise Monitoring: $L_{eq(15\ mins)}$ during night time	M3	Kwan Yick Building Phase III	23 January 2014
	M5a	Near the entrance of Chuk Lam Ming Tong	9 January 2014
	M6a	Aegean Terrace	15 January 2014
	M8a	Near security room of Wah Lai House	2 and 28 January 2014
Noise Monitoring: $L_{eq(15\ mins)}$ during evening time	M3	Kwan Yick Building Phase III	19(1), 23 and 28(1) January 2014
	M5a	Near the entrance of Chuk Lam Ming Tong	9 January 2014
	M6a	Aegean Terrace	15 January 2014
	M8a	Near security room of Wah Lai House	2 and 28 January 2014

Parameter	ID	Description	Date
Air Quality Monitoring: 1-hour and 24-hour TSP	CM_FM1	Western Wholesale Food Market	1-hour : 3, 9, 15, 21, 27 and 30 January 2014 24-hour: 3, 9, 15, 21, 27 and 29 January 2014
	CM_CB1a	The Arcade, Cyberport	1-hour: 2, 7, 13, 17, 23 and 29 January 2014 24-hour: 3(2), 9, 15, 21, 27 and 29 January 2014
	CM_WF1a	Wah Ming House	1-hour: 3, 9, 14, 20, 24 and 30 January 2014 24-hour: 3, 9, 15, 21, 27 and 29 January 2014
	CM_AB1a	The Hong Kong Ice and Cold Storage, formally known as Dairy Farm Ice and Cold Storage	1-hour: 2, 7, 13, 17, 23 and 29 January 2014 24-hour: 3, 9, 15, 21, 27 and 29 January 2014
Landscape and Visual	n/a	n/a	27 January 2014
Hazard to Life	n/a	n/a	On-going
Cultural Heritage	n/a	n/a	n/a

Remark:
(1) The data were provided by Contract No. DC/2007/23. .
(2) The HVS was operated less than 24 hours at Cyberport PTW on 3 January 2014

Site inspections were undertaken jointly with the Contractor and Engineer Representative on 7, 15, 21 and 28 January 2014, with Independent Environmental Checker's participation on 21 January 2014.

Breaches of Action and Limit Levels

During the reporting period, four non-project related Limit Level (LL) exceedances in noise criteria were recorded on 2, 9, 23 and 28 January 2014.

One non-project related LL exceedance of noise was recorded at station M3 (Kwan Yick Building Phase III) during restricted hours (night time). Two non-project related LL exceedances of noise were recorded at station M8a (Near security room of Wah Lai House) during restricted hours (night time). One non-project related LL exceedance of noise was recorded at station M5a (near entrance of Chuk Lam Ming Tong) during restricted hours (night time).

The details of the complaint investigation results have been given in Appendix M.

A summary of exceedances is provided in the table below.

Date of Exceedance	Monitoring Location	Exceedance	Details
2 January 2014	M8a, Near security room of Wah Lai House	Limit Level exceedance 60 dB(A) during night time	Exceedance was considered to be non-project related.
9 January 2014	M5a, near entrance of Chuk Lam Ming Tong	Limit Level exceedance 63 dB(A) during night time	Exceedance was considered to be non-project related.
23 January 2014	M3, roof of Kwan Yick Building Phase III	Limit Level exceedance 63 dB(A) during evening time	Exceedance was considered to be non-project related.
28 January 2014	M8a, Near security room of Wah Lai House	Limit Level exceedance 61 dB(A) during night time	Exceedance was considered to be non-project related.

Complaint Log

No environmental complaints were received during this reporting period

Notifications of Summons and Prosecutions

There were no notifications of summons or prosecutions received during this reporting period.

Environmental Non-compliance

There were no environmental non-compliances recorded during this report period.

Environmental Inspection

EPD carried out a site inspection at Cyberport PTW on 20 January 2014. EPD considered that the effluent quality of the discharge from the wastewater treatment facility was unlikely to meet the licence limit. The Contractor has increased the frequency of checking (every 2 hours) on the wastewater treatment facility and kept records of checking, increased the frequency of sludge removal from the AquaSed and the sedimentation tanks; and increased the storage capacity of chemicals for AquaSed from 200L to 1000L to avoid clariflocs deficiencies

Reporting Changes

This report has been developed in compliance with the reporting requirements for the subsequent monthly EM&A report as required by the Project EM&A Manual.

Future Key Issues

Aberdeen

1) Lining (implement method statement and standard EMP mitigations)

Wah Fu

1) Lining (implement method statement and standard EMP mitigations)

Cyberport

1) Lining (implement method statement and standard EMP mitigations)

Sandy Bay

1) Lining (implement method statement and standard EMP mitigations)

Sai Ying Pun

1) Lining (implement method statement and standard EMP mitigations)

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APPENDICES

1 INTRODUCTION

1.1 Basic Project Information

The Harbour Area Treatment Scheme (HATS) Stage 2A Sewage Conveyance System is proposed to collect and convey the pre-treated sewage from eight existing Preliminary Treatment Works (PTW), located along the northern and south-western shoreline of Hong Kong Island, to the Stonecutters Island Sewage Treatment Works (SCISTW) for treatment before final disposal into the western harbour via an existing submarine outfall.

The sewerage tunnels to be constructed under Contract No. DC/2007/24 Harbour Area Treatment Scheme Stage 2A Construction of Sewage Conveyance System from Aberdeen to Sai Yin Pun (hereinafter referred as the Project) run from Aberdeen PTW Production/Drop Shaft towards Sai Ying Pun Junction Shaft. The tunnel has a total length of approximately 7.5km and it has various internal sizes. The transitions are located at the junctions with audits connecting to the drop shafts at Aberdeen, Wah Fu, Cyberport, Sandy Bay and Sai Ying Pun. An overall layout plan of the Project is provided in Figure 1.1.

Atkins China Ltd (ACL) was appointed by Leighton-LNS Joint Venture (the Contractor of this Project, hereinafter referred as the Contractor) as the Environmental Team (ET) of this Project, to undertake a Environmental Monitoring and Audit (EM&A) of this Project in accordance with "HATS Stage 2A Environmental Impact Assessment Study – Investigation, Final EM&A Manual" (Register No. AEIAR-121/2008) under Environmental Permit (EP) No. EP-322/2008/F Part D, Condition 4.2.

1.2 Project Organisation and Contact Details

The key parties included:

- Project Proponent – Drainage Services Department
- Contractor – Leighton-LNS JV
- Environmental Authority – Environmental Protection Department
- The Engineer's Representative (ER) – Metcalf & Eddy-AECOM JV
- Independent Environmental Checker (IEC) - Mott MacDonald Hong Kong Ltd.
- Contractor's Environmental Team (ET) – Atkins China Ltd.

Project organisation and contact details are shown in Appendix A.

1.3 Construction Programme

The Contractor's 3-month construction programme is provided in Appendix B.

1.4 Locations of Monitoring Stations

Details of the monitoring stations are provided in Section 3 and relevant figures are shown in Figures 2.1 to 2.7.

2 ENVIRONMENTAL STATUS

2.1 Work undertaken during the Reporting Period

The major construction activities undertaken during this reporting period are summarised below (see Figures 2.1 to 2.7 for the site locations):

Aberdeen

1) Lining (implement method statement and standard EMP mitigations)

Wah Fu

1) No major construction works

Cyberport

1) Lining (implement method statement and standard EMP mitigations)

Sandy Bay

1) Lining (implement method statement and standard EMP mitigation)

Sai Ying Pun

1) Lining (implement method statement and standard EMP mitigations)

2.2 Environmental Permit and License

The Environmental Permit (EP-322/2008/F) was issued on 10 October 2012 by EPD.

Chemical Waste

The Project's registrations as a Chemical Waste Producer are listed in Table 2.1:

Table 2.1 Summary of Registrations as a Chemical Waste Producer

No.	Location	WPN Number	Issue Date
1	Cyberport	5213-171-L2699-01	30 Oct 2009
2	Sandy Bay	5213-171-L2699-05	30 Oct 2009
3	Sai Ying Pun	5111-112-L2702-01	8 Dec 2009
4	Wah Fu	5213-172-L2699-02	30 Oct 2009
5	Aberdeen PTW	5213-173-L2699-04	30 Oct 2009
6	Aberdeen Workshop	5213-173-L2699-03	30 Oct 2009

No disposal of chemical waste was carried out in the reporting period.

Water Discharge Licence

Details of water discharge licences for all the Project locations are listed in Table 2.2:

Table 2.2 Summary of Water Discharge Licences

No.	Location	Licence Number	Issue Date	Validity
1	Cyberport	WT00017312-2013	4 Oct 2013	31 Oct 2018
2	Sandy Bay	WT00005533-2009	3 Dec 2009	31 Dec 2014
3	Sai Ying Pun	WT00007459-2010	10 Sep 2010	30 Nov 2014
4	Wah Fu	WT00005532-2009	3 Dec 2009	31 Dec 2014
5	Aberdeen PTW	WT00012214-2012	22 Mar 2012	31 Dec 2014
6	Aberdeen Workshop	WT00005530-2009	3 Dec 2009	31 Dec 2014

Construction Noise Permit

The statuses of Construction Noise Permits for this Project are shown in Table 2.3:

Table 2.3 Status of Construction Noise Permits

No	Location	Operations	Time	Duration	Remark
1	Cyberport	Construction Works	1900-2300 normal day 0700-2300 holiday	1 Jan 2014 ~ 31 Mar 2014	Valid with CNP GW-RS1488-13
2	Cyberport	Construction Works	2300-0700 any day	27 Dec 2013 ~ 27 Mar 2014	Valid with CNP GW-RS1486-13
3	Cyberport	Waste water treatment and exhaust fan	1900-2300 normal day 0700-2300 holiday	31 Aug 2013 - 28 Feb 2014	Valid with CNP GW-RS 0873-13
4	Sandy Bay	Rock excavation, drilling, welding grouting for shaft and tunnel	24 hours(1)	22 November 2013 - 21 February 2014	Valid with CNP GW-RS 1296-13
5	SYP	Construction Works	24 hours	25 Oct 2013 – 15 Apr 2014	Valid with CNP GW-RS 1172-13
6	Wah Fu	Shotcrete and rock drill	1900-2300 normal day 0700-2300 holiday	30 November 2013 - 29 May 2014	Valid with CNP GW-RS 1266-13

No	Location	Operations	Time	Duration	Remark
7	Aberdeen	Rock drill and excavation	1900 – 2300normal day 0700 – 2300 holiday	22 Dec 2013 ~ 21 Jun 2014	Valid with CNP GW-RS 1430-13
8	Aberdeen	Shaft and tunnel works	2300 to 0700 on any day	21 Dec 2013~ 20 Jun 2014	Valid with CNP GW-RS 1429-13

Remark: (1) 24 hours operation is applied for certain groups, details may refer to the relevant CNP.

2.3 Environmental Document Submission

A summary of Environmental Certification Sheet submissions within the reporting period under the Project EP is presented in Table 2.4.

Table 2.4 Summary of Environmental Document Submission

No.	Document Title	Date of Submission	Date of Verification/ Approval
1	Monthly Environmental Monitoring and Audit Report No.47, Covering the Period from 1 December 2013 to 31 December 2013 (EMA/061, Rev A)	13 January 2014	13 January 2014
2.	Quarterly Environmental Monitoring and Audit Report No.16, Covering the Period from 1 October 2013 to 31 December 2013 (EMA/062, Rev A)	5 February 2014	11 February 2014

2.4 Environmental Monitoring Locations

There are seven noise monitoring stations and four air quality monitoring stations designated for the Project and the relevant locations and sensitive receivers are shown on Figures 2.1 to 2.4 and Figures 2.5 to 2.7 respectively. Descriptions of these monitoring stations are provided in Table 2.5.

Table 2.5 Noise and Air Quality Monitoring Stations Descriptions

Monitoring ID	Description	Uses/ Location of Measurement	Easting	Northing
Noise Monitoring Stations				
M3 (1)	Rooftop (24/F) of Block A, Kwan Yick Building Phase III (Fung Mat Road Site)	Medium-rise domestic premises – private housing estate	832480	816602
M5	Rooftop (4/F) of Chuk Lam Ming Tong (Sandy Bay PTW)	Hospital and clinics - home for the aged	830779	814609
M5a	Near entrance of Chuk Lam Ming Tong (Sandy Bay PTW)	Hospital and clinics - home for the aged	830779	814609
M6a (2), (3)	2m above ground, outside of Aegean Terrace (Cyberport PTW)	Low-rise domestic premises – private housing	831304	813890
M7a (2)	Rooftop (19/F) of Wah Ming House (Wah Fu PTW)	Medium-rise domestic premises – public housing estate	831940	812497
M8 (4)	Roof (39/F) of Wah Lai House (Aberdeen PTW)	High-rise domestic premises – public housing estate	832555	812299
M8a	Near security room of Wah Lai House	High-rise domestic premises – public housing estate	832555	812299
Air Quality Monitoring Stations				
CM_FM1 (5)	Western Wholesale Food Market (Fung Mat Road Site)	Podium	832341	816776
CM_CB1a (2)	The Arcade, Cyberport (Cyberport PTW)	Ground level at children playground, adjacent to Project site office	831298	813514
CM_WF1a (2)	Wah Ming House (Wah Fu PTW)	Roof	831943	812497
CM_AB1a (2), (6)	The Hong Kong Ice and Cold Storage, formally known as Dairy Farm Ice and Cold Storage (Aberdeen PTW)	1.5m raised platform at car park	832873	812158

Notes:
(1) Both baseline and impact noise monitoring are conducted by ET of Contact DC/2007/23. The baseline noise monitoring data will be used as a reference and impact noise monitoring data is adopted in this Report.
(2) Revision to the original monitoring location in Project EM&A Manual was made and was verified by IEC on 19 November 2009 and subsequently approved by EPD on 27 November 2009.
(3) A correction factor of +3dB(A) is added as free field to façade measurement conversion.
(4) Both baseline and impact noise quality monitoring was conducted by ET of this Project. The impact noise monitoring data will be adopted by ET of Contract DC/2008/09.
(5) Baseline air quality monitoring was conducted by ET of Contact DC/2007/23, whereas impact air quality monitoring was conducted by ET of this Project. The baseline air quality monitoring data will be used as a reference. The impact air quality data will be adopted by ET of Contact DC/2007/23.
(6) Both baseline and impact air quality monitoring are conducted by ET of this Project and are adopted by ET of Contract DC/2008/09.

3 EM&A REQUIREMENTS

3.1 Summary of Impact EM&A Requirements

The EM&A for this Project requires quantitative monitoring on noise and air quality (Total Suspended Particulates (TSP)) on regular and ad-hoc basis, in addition to site inspections. A summary of key impact EM&A requirements for this Project is presented in Table 3.1.

Table 3.1 Summary of Impact EM&A Requirements

Parameter	Description	Frequency
Noise	$L_{eq(30min)}$ between 07:00 – 19:00 hours on normal weekdays, $L_{eq(15min)}$ for other time periods and L_{10} and L_{90} (On-site measurement using sound level meter)	Once a week. One set of measurements between 0700 and 1900 hours on normal weekdays. If construction works are extended to include works during the hours of 1900 – 0700 as well as public holidays and Sundays, additional weekly impact monitoring shall be carried out during respective restricted periods.
Air Quality	24-hour TSP (On-site measurement using High Volume Sampler) 1-hour TSP (Measured by direct reading methods which are capable of producing comparable results as that by the high volume sampling method) (1) (2)	For 24-hour TSP monitoring, the sampling frequency is at least once in every six-days. For 1-hour TSP monitoring, the sampling frequency is at least three times in every six-days.
Waste	Routine supervision of construction works	As per site inspection schedule.
Landscape and Visual	Survey of full effectuation of mitigation measures	Once per month
Hazard to Life	Vibration and ground monitoring along boundary of HKCG Depot Vibration level associated with blasting for Tunnel P, shafts and other construction works	On-going
Cultural Heritage	Vibration level at identified historical buildings	On-going

Notes: (1) Except at CM_FM1, where HVS is used for the impact monitoring of 1 hour TSP.
(2) Laser Particle Photometer (hand held) was used. Relevant specification was submitted to IEC for information on 19 October 2009 under Baseline Environmental Monitoring Plan (GEN/023).

3.2 Environmental Quality Performance Limits

Environmental Quality Performance Limits (Action and Limit levels) for noise and air quality have been developed for the Project Baseline Monitoring Report and are summarised in Table 3.2 and Table 3.3 respectively.

Table 3.2 Action and Limit Levels for Impact Noise Monitoring

Time Period	Action	Limit
0700-1900 hrs on normal weekdays	When one documented complaint is received	75dB(A)(1)
0700-2300 hrs on holidays and 1900-2300 hrs on all other days		60/65/70dB(A)(2)
2300-0700 of next day		45/50/55dB(A)(2)

Note: (1) Between 0700-1900, construction noise limit for school during normal term time is 70dB(A) and 65dB(A) during examination period.
(2) To be selected based on Area Sensitivity Rating

Table 3.3 Action and Limit Levels for Air Quality Monitoring

Monitoring ID	1-hour TSP Level, µg/m³		24-hour TSP Level, µg/m³	
	Action	Limit	Action	Limit
CM_FM1	332 (1)	500	188 (2)	260
CM_CB1a	280 (1)	500	178 (2)	260
CM_WF1a	285 (1)	500	185 (2)	260
CM_AB1a	283 (1)	500	174 (2)	260

Notes: (1) For Baseline Level ≤ 384 µg/m³, Action Level = (Baseline Level*1.3 + Limit Level)/2;
For Baseline Level > 384 µg/m³, Action Level = Limit Level
(2) For Baseline Level ≤ 200 µg/m³, Action Level = (Baseline Level*1.3 + Limit Level)/2;
For Baseline Level > 200 µg/m³, Action Level = Limit Level

3.3 Event and Action Plan

Event and Action Plans for noise, air quality as well as visual and landscape aspects have been developed as part of the Baseline Monitoring Report for the Project and the details are provided in Appendix C.

3.4 Environmental Measures and Implementation Status

The mitigation measures listed in the Project EIA Report, EM&A Manual and Environmental Permit as well as relevant implementation status are provided in Appendix D. Based on the site inspection findings, it appears that the Contractor has implemented the required mitigation measures during construction works to date.

4 MONITORING RESULTS

4.1 Monitoring Methodology and QA/QC Procedure

Noise Monitoring

Noise monitoring methodology and QA/QC procedure was detailed in Section 4.1 of Monthly EM&A Report No. 1 (GEN/030 Rev B). No change in noise monitoring methodology and QA/QC procedure was made.

Air Quality

Air quality monitoring methodology and QA/QC procedure was detailed in Section 4.1 of Monthly EM&A Report No. 1 (GEN/030 Rev B). No change in air quality monitoring methodology and QA/QC procedure was made.

Landscape and Visual

Monthly site audit is undertaken to check the design, implementation and maintenance of landscape and visual mitigation measures at all Project work sites.

4.2 Monitoring Equipment

Noise

The equipment used for noise monitoring is listed in Table 4.1.

Table 4.1 Equipment for Noise Monitoring

Equipment	Model
Integrated Sound Level Meters	B&K 2238 Serial no. 2684503
Integrated Sound Level Meters	B&K 2238 Serial no. 2800932
Calibrator	B&K 4231, Serial no. 3003246
Calibrator	B&K 4231, Serial no. 3004068

Air Quality

The equipment used for air quality monitoring is listed in Table 4.2.

Table 4.2 Equipment for Air Quality Monitoring

Parameter Measured	Equipment
1-Hour Sampling for CM_CB1a, CM_WF1a and CM_AB1a	Sibata Laser Dust Monitor Model LD-3B was used for monitoring stations CM_CB1a, CM_WF1a and CM_AB1a. This portable instrument is capable of providing: • Real time TSP concentration • Adjustable logging intervals from 6 to 600 seconds • Average concentration over logging interval and maximum and average values for entire logging period
24-Hour Sampling for CM_CB1a, CM_WF1a, CM_AB1a and CM_FM1; and 1-Hour Sampling for CM_FM1	A High Volume Sampler Model TE-5170, by Tisch Environmental, Inc., was used for monitoring stations CM_CB1a, CM_WF1a and CM_AB1a. This instrument was equipped with: • Mass flow controller with 20 – 60 SCFM adjustable flow probe • Mechanical timer for recording elapsed-time and 24-hour operation A continuous flow recorder for continuous monitoring

4.3 Equipment Calibration

The calibration frequencies of the monitoring equipment are provided in Table 4.3.

Table 4.3 Equipment Calibration Frequencies

Equipment	Calibration Frequency
Integrated SLM and Calibrator	Every year
High Volume Sampler	Every two months
Laser Dust Monitor	Every year

Copies of the calibration certificates for the equipment are presented in Appendix F.

4.4 Impact Monitoring Schedule from 1 January 2014 to 31 January 2014

The noise and air quality monitoring schedule for the reporting period is shown in Appendix G. The visual and landscape monitoring was carried out on 27 January 2014.

Regular site inspections were carried out to assess whether the project's environmental protection and pollution control measures are in compliance with the contract specifications. Inspections were carried out on 7, 15, 21 and 28 January 2014, with Independent Environmental Checker's participation on 21 January 2014.

4.5 Impact Monitoring Results

Noise Monitoring Results

The noise monitoring results at the monitoring stations are provided in Appendix H. Graphical presentation of the noise monitoring data is shown in Appendix I.

Air Quality Results

The HVS was operated less than 24 hours at Cyberport PTW on 3 January 2014.

The air quality monitoring results at the monitoring stations are presented in Appendix J. Graphical presentation of the air quality monitoring data is provided in Appendix K.

4.6 Weather Condition during Reporting Period

The weather conditions during reporting period are provided in Appendix E.

4.7 Waste Management

A summary of waste flow for January 2014 is outlined in Table 4.4. Inert construction and demolition (C&D) waste (i.e. public fill) was disposed of at Chai Wan Public Fill Barging Point/fill bank at Tseung Kwan O Area 137 (for public fill contains slurry only). Other C&D waste such as paper/ cardboard collected by local waste recycling contractor whilst general refuse was disposed of at South East New Territories Landfill.

Table 4.5 Monthly Summary Waste Flow Table during Reporting Period

Month	Actual Quantities of Inert C&D Materials Generated Monthly					
	Total Quantity Generated	Broken Concrete (2)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill
	(in '000 m^3(4))					
January 2014	0.163	0	0	0	0.128	0
Month	**Actual Quantities of C&D Wastes Generated Monthly**					
	Metals	Paper/ cardboard packaging	Plastics (3)	Chemical Waste	Others, e.g. general refuse	
	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 m^3(4))	
January 2014	36.48	0.237	0	1000L + 70 waste batteries	0.035	

Notes:
(1) The waste flow table will also include C&D materials that are specified in the Contract to be imported for use at the Site.
(2) Broken concrete for recycling into aggregates.
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
(4) Assumption: 1m^3 of Inert C&D Materials weigh 1.9 tonnes and 1m^3 of C&D Wastes weigh 1.6 tonnes.
(5) The chemical waste was in liquid form during this reporting period.

4.8 Landscape and Visual

The monthly site audit was undertaken on 27 January 2014 to check the design, implementation and maintenance of landscape and visual mitigation measures, as laid out in the Project EM&A Manual, at work sites in Aberdeen, Wah Fu, Cyberport, Sandy Bay and Sai Ying Pun. The landscape and visual monitoring report is attached in Appendix L.

4.9 Hazard to Life

The ground settlement markers, structural settlement markers and piezometers were installed for monitoring.

4.10 Cultural Heritage

Vibration of historical buildings and structures was not carried out during this reporting month as the construction works were outside the Influence Zone.

5 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

5.1 Environmental Exceedance

During the reporting period, four non-project related Limit Level (LL) exceedances in noise criteria were recorded 2, 9, 23 and 28 January 2014.

One non-project related LL exceedance of noise was recorded at station M3 (Kwan Yick Building Phase III) during restricted hours (night time). Two non-project related LL exceedances of noise were recorded at station M8a (Near security room of Wah Lai House) during restricted hours (night time). One non-project related LL exceedance of noise was recorded at station M5a (near entrance of Chuk Lam Ming Tong) during restricted hours (night time).

All landscape and visual mitigation measures listed out in the Project EM&A Manual has been implemented in full except for CM2 at Cyberport site, Aberdeen Site and Sandy Bay site.

In Cyberport site, the identification tag for the retained tree T48(R) was still missing. The condition of the retained tree T068(R) was still observed deteriorating with shrunken leaves. And general refuse was observed on the retained trees T068(R). The tree protection zone was observed damaged of the retained trees T075(R).

In Sandy Bay site, the T017 (T) was still in very poor health. The condition of the retained tree T053(R) was still deteriorating with damages to its stems and foliage since the audit of September 2011. Tree identification tag was still observed missing for retained tree T49(R). The tree without label at the entrance of Sandy Bay site was observed with decay fungi. The retained tree T039(R) was observed without tree tag.

In the Aberdeen site, the conditions of the retained trees T078(R), T079(R) and T080(R) were still deteriorating with some of their stems and leaves dying off since the audit of November 2011. The tree without label at the backyard of Aberdeen storage site was observed with decay fungi. And the tree protection zone for retained tree T078(R), T079(R), T080(R) and T106(R) was observed damaged.

According to the Contractor's monitoring data, no exceedance in structural settlement monitoring results was recorded during the reporting period.

5.2 Site Inspections and Audit

A joint site inspection with the IEC and the Contractor was undertaken on 21 January 2014. All the works areas were observed to be generally complied with the environmental mitigation requirements and no particular water quality impacts found.

EPD carried out a site inspection at Cyberport PTW on 20 January 2014. EPD considered that the effluent quality of the discharge from the wastewater treatment facility was unlikely to meet the licence limit. The Contractor has increased the frequency of checking (every 2 hours) on the wastewater treatment facility and kept records of checking, increased the frequency of sludge removal from the AquaSed

and the sedimentation tanks; and increased the storage capacity of chemicals for AquaSed from 200L to 1000L to avoid clariflocs deficiencies

Records of site inspections observations and corrective actions during the reporting period are provided in Appendix N. Following the environmental inspections, the Contractor has undertaken remedial actions to improve the implementation of mitigation measures.

The Contractor has prepared a Waste Management Plan for the project, although it is not an EP requirement. During the site inspection, the Contractor was seen to have implemented good site practices and mitigation measures as stated in the EM&A Manual.

5.3 Environmental Complaint and Prosecution

No complaints were received in relation to environmental impact during the reporting period.

The summary of environmental complaints is shown in Table 5.1.

Table 5.1 Summary of Environmental Complaints

Total No. of Complaints Received	No. of Complaints Received during Reporting Period	No. of Active Complaints	No. of Inactive Closed Complaints
15	0	0	15

No notifications of summons or prosecutions were received in relation to environmental impact during the reporting period (see Table 5.2).

Table 5.2 Summary of Notifications of Summons and Prosecutions

Total No. of Notifications of Summons / Prosecutions Received	No. of Notifications of Summons / Prosecutions Received during Reporting Period	Status of Notifications of Summons / Prosecutions
0	0	N/A

6 FORECAST AND SCHEDULE

6.1 Key Issues for the Coming Months

The key issues with respect to the works in the forthcoming 2 months include:

Aberdeen

1) Lining (implement method statement and standard EMP mitigations)

Wah Fu

1) Lining (implement method statement and standard EMP mitigations)

Cyberport

1) Lining (implement method statement and standard EMP mitigations)

Sandy Bay

1) Lining (implement method statement and standard EMP mitigations)

Sai Ying Pun

1) Lining (implement method statement and standard EMP mitigations)

6.2 Monitoring Schedules for the Next Month

The proposed schedule for noise and air quality monitoring from 1 February 2014 to 28 February 2014 is provided in Appendix G.

7 CONCLUSION

This is the forty-ninth Monthly EM&A Report prepared by ACL for Contract No. DC/2007/24 Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun. This Report summarises the results and findings of the EM&A during the reporting period from 1 to 31 January 2014.

During the reporting period, four non-project related Limit Level (LL) exceedances in noise criteria were recorded on 2, 9, 23 and 28 January 2014.

No vibration monitoring was undertaken for Influence Zone during the reporting period.

The total quantity of waste generated during the reporting period is 163 m3. For the hazard to life monitoring, there were no blasting was conducted inside the influence zone during the reporting period.

There was no environmental complaint; prosecution or summons was received during the reporting period. Mitigation Measures stated in the Project EIA have been implemented.

EPD carried out a site inspection at Cyberport PTW on 20 January 2014. EPD considered that the effluent quality of the discharge from the wastewater treatment facility was unlikely to meet the licence limit. The Contractor has increased the frequency of checking (every 2 hours) on the wastewater treatment facility and kept records of checking, increased the frequency of sludge removal from the AquaSed and the sedimentation tanks; and increased the storage capacity of chemicals for AquaSed from 200L to 1000L to avoid clariflocs deficiencies

The landscape and visual site audit was undertaken on 27 January 2014 to check the design, implementation and maintenance of L&V mitigation measures at work sites. All landscape and visual mitigation measures listed out in the Project EM&A Manual have been implemented in full except CM2 at Cyberport, Aberdeen and Sandy Bay site.

Overall, environmental impacts arising from the Project construction activities have been controlled and properly rectified.

FIGURES

Rev	Description	Date	Dgn	Chk	Auth
A	FIRST ISSUE	03/02	SC	SB	EC

渠務署
DRAINAGE SERVICES DEPARTMENT

HARBOUR AREA TREATMENT SCHEME DIVISION

Project title

CONTRACT NO. DC/2007/24
HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM
FROM ABERDEEN TO SAI YING PUN

Supervising Officer

AECOM

Metcalf & Eddy – AECOM Joint Venture

Main Contractor

LEIGHTON 禮頓 | LNS

Leighton - LNS Joint Venture

Designer

ATKINS

Drawing title

OVERALL LAYOUT PLAN

Designed: SC	Scale at A3: N.T.S.
Drawn: AC	Status: MONTHLY EM&A REPORT
Checked: SB	
Authorised: EC	Figure No.: 1.1
CAD ref.: 4417-EM-FIG-1-1.dgn	Rev.: A

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A1 841mm x 594mm

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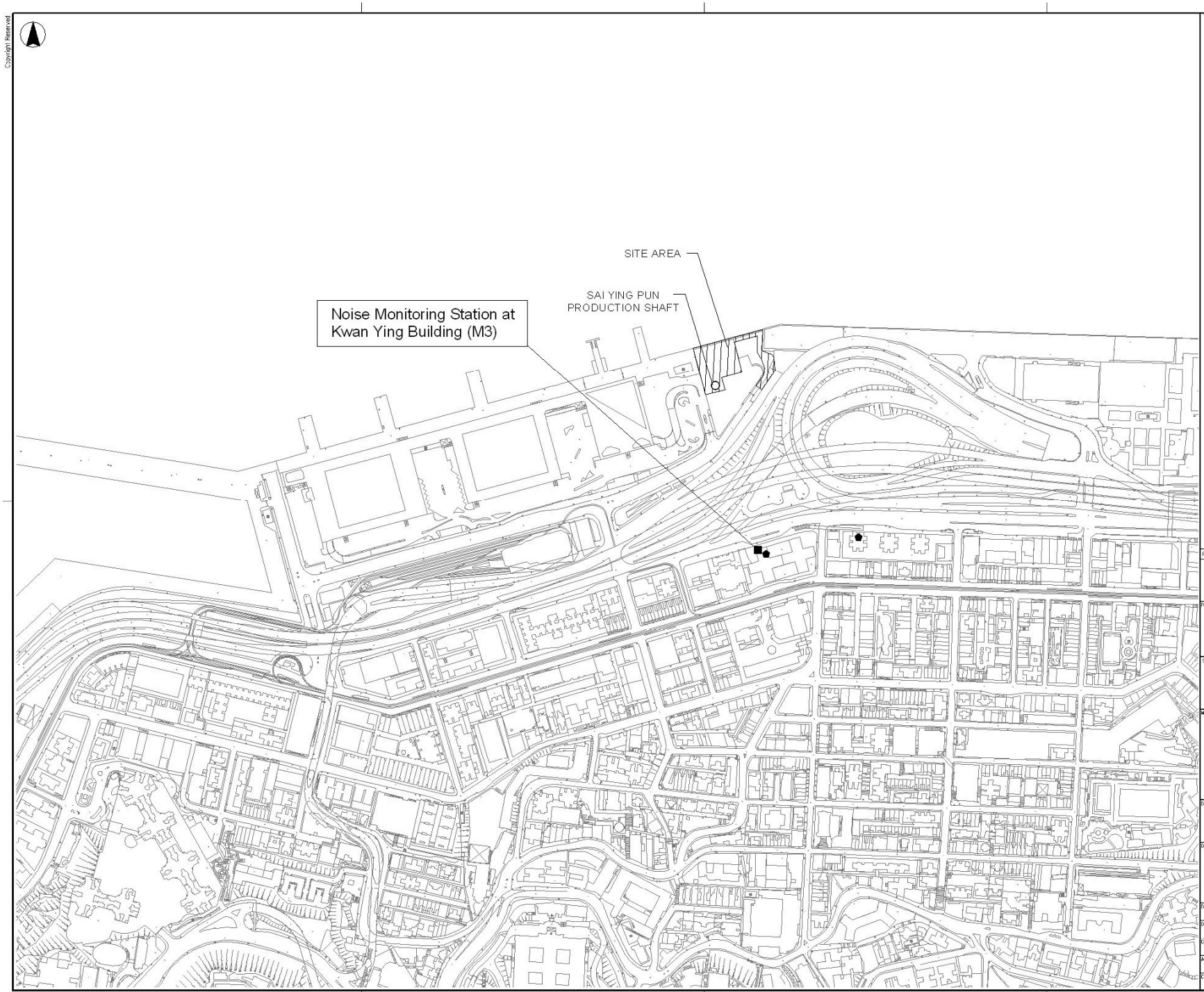


LEGEND
- NOISE MONITORING STATION
- NOISE SENSITIVE RECEIVERS

0 50 100 150 Meters

Rev	Description	Date	Dgn	Chk	Auth

DRAINAGE SERVICES DEPARTMENT
HARBOUR AREA TREATMENT SCHEME DIVISION

Project Title
CONTRACT NO. DC/2007/24
HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM
FROM ABERDEEN TO SAI YING PUN

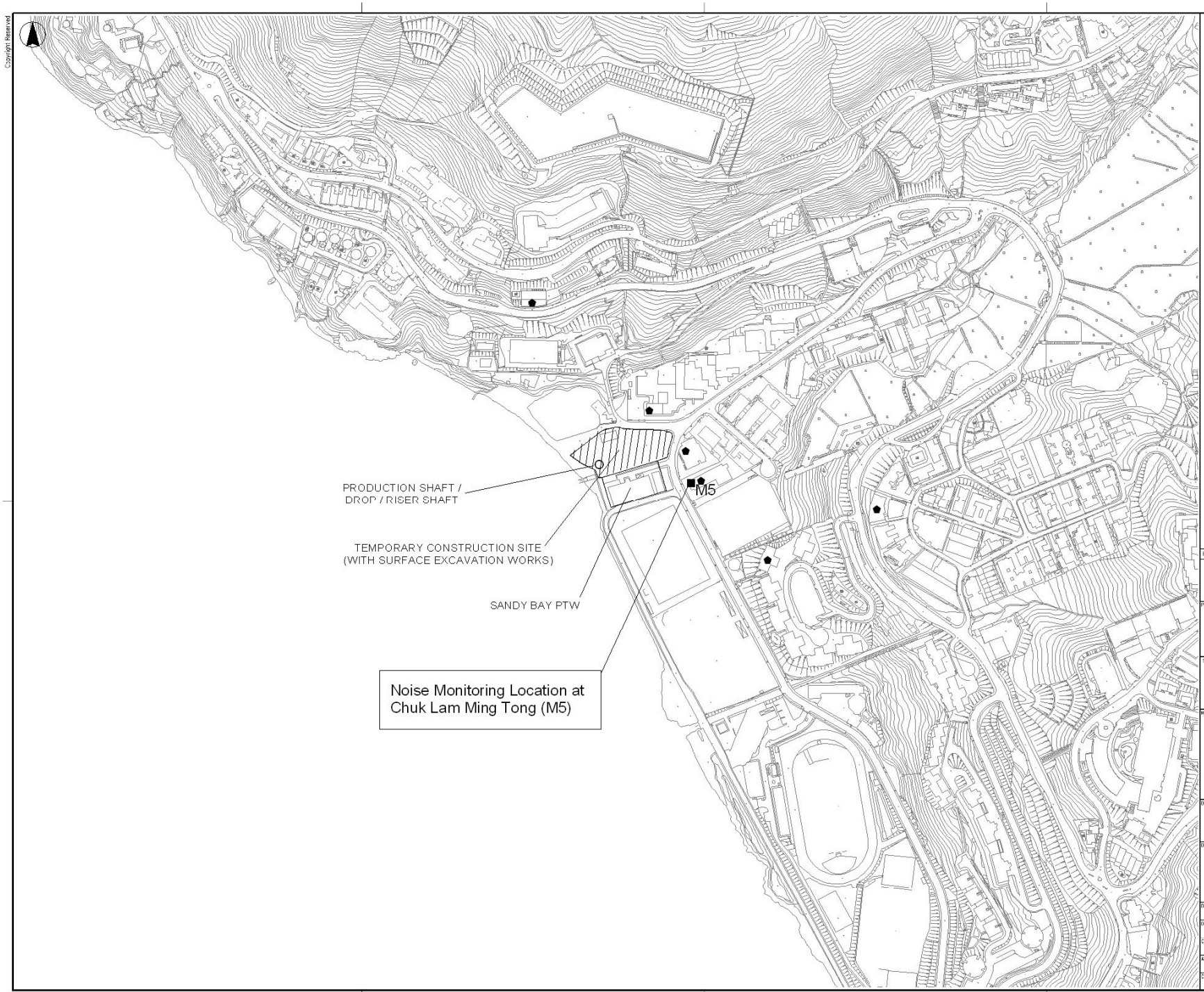
Supervising Officer: AECOM
Metcalf & Eddy – AECOM Joint Venture

Main Contractor: Leighton - LNS Joint Venture

Designer: ATKINS

Drawing Title
CONSTRUCTION NOISE
MONITORING STATION
AT FUNG MAT ROAD SITE

Designed | Scale at A1
Drawn | Status: MONTHLY EM&A REPORT
Checked
Authorised | Drawing No. 2.1 | Rev. A
CAD ref.



LEGEND

- NOISE MONITORING STATION
- NOISE SENSITIVE RECEIVERS

0 50 100 150 Meters

Rev	Description	Date	Dgn	Chk	Auth

DRAINAGE SERVICES DEPARTMENT

HARBOUR AREA TREATMENT SCHEME DIVISION

Project title

CONTRACT NO. DC/2007/24
HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM
FROM ABERDEEN TO SAI YING PUN

Supervising Officer

AECOM

Metcalf & Eddy – AECOM Joint Venture

Main Contractor

Leighton - LNS Joint Venture

Designer

ATKINS

Drawing title

CONSTRUCTION NOISE MONITORING STATION AT SANDY BAY PTW

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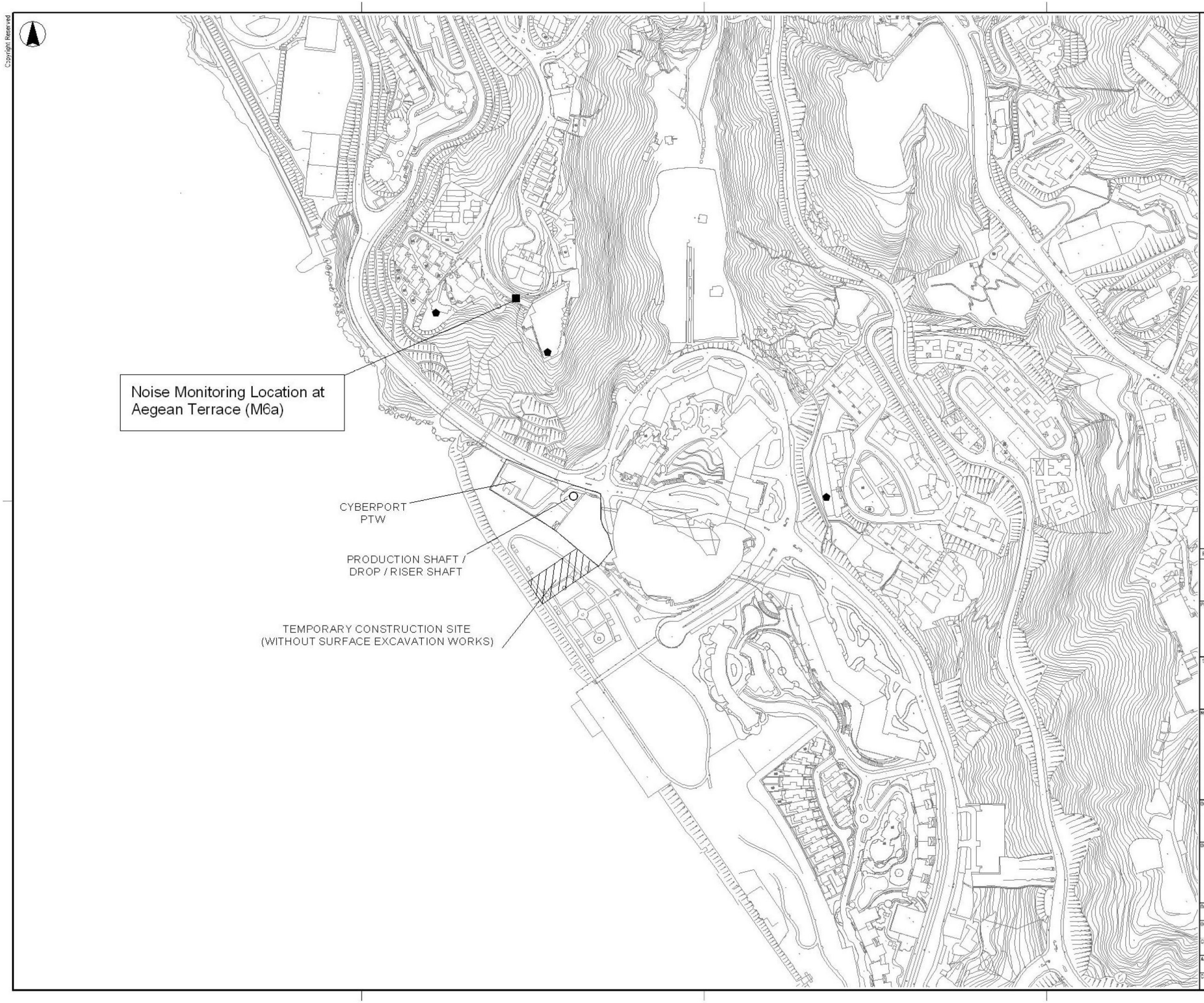

LEGEND
- NOISE MONITORING STATION
- NOISE SENSITIVE RECEIVERS

0 50 100 150 Meters

Rev	Description	Date	Dgn	Chk	Auth

DRAINAGE SERVICES DEPARTMENT
HARBOUR AREA TREATMENT SCHEME DIVISION

Project title
CONTRACT NO. DC/2007/24
HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM FROM ABERDEEN TO SAI YING PUN

Supervising Officer
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Metcaf & Eddy – AECOM Joint Venture

Main Contractor
Leighton - LNS Joint Venture

Designer
ATKINS

Drawing title
CONSTRUCTION NOISE MONITORING STATION AT CYBERPORT PTW

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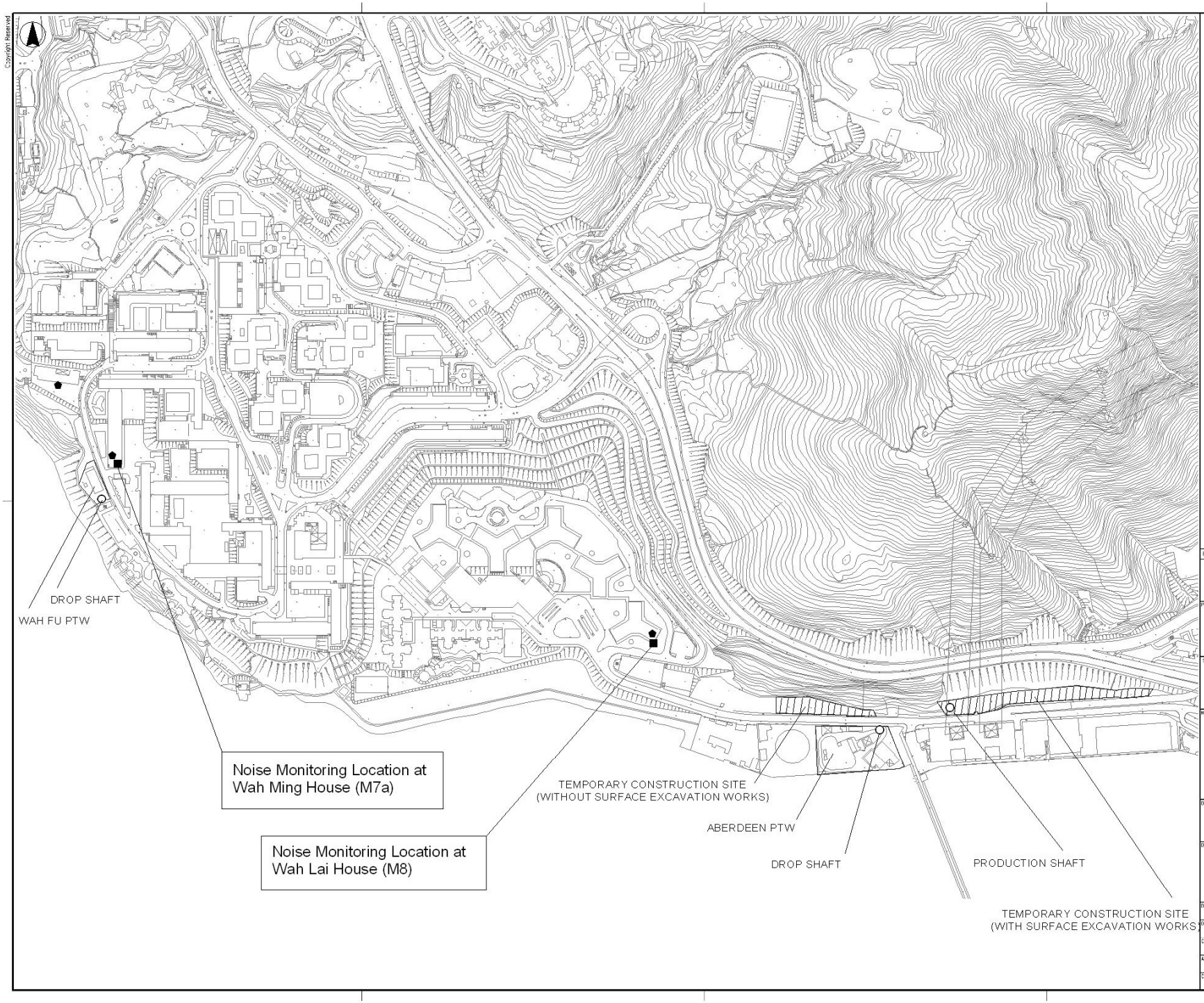

Rev	Description	Date	Dgn	Chk	Auth

DRAINAGE SERVICES DEPARTMENT
HARBOUR AREA TREATMENT SCHEME DIVISION

Project title
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HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM
FROM ABERDEEN TO SAI YING PUN

Supervising Officer
AECOM
Metcalf & Eddy - AECOM Joint Venture

Main Contractor
Leighton - LNS Joint Venture

Designer
ATKINS

Drawing title
CONSTRUCTION NOISE MONITORING STATION AT WAH FU AND ABERDEEN PTW

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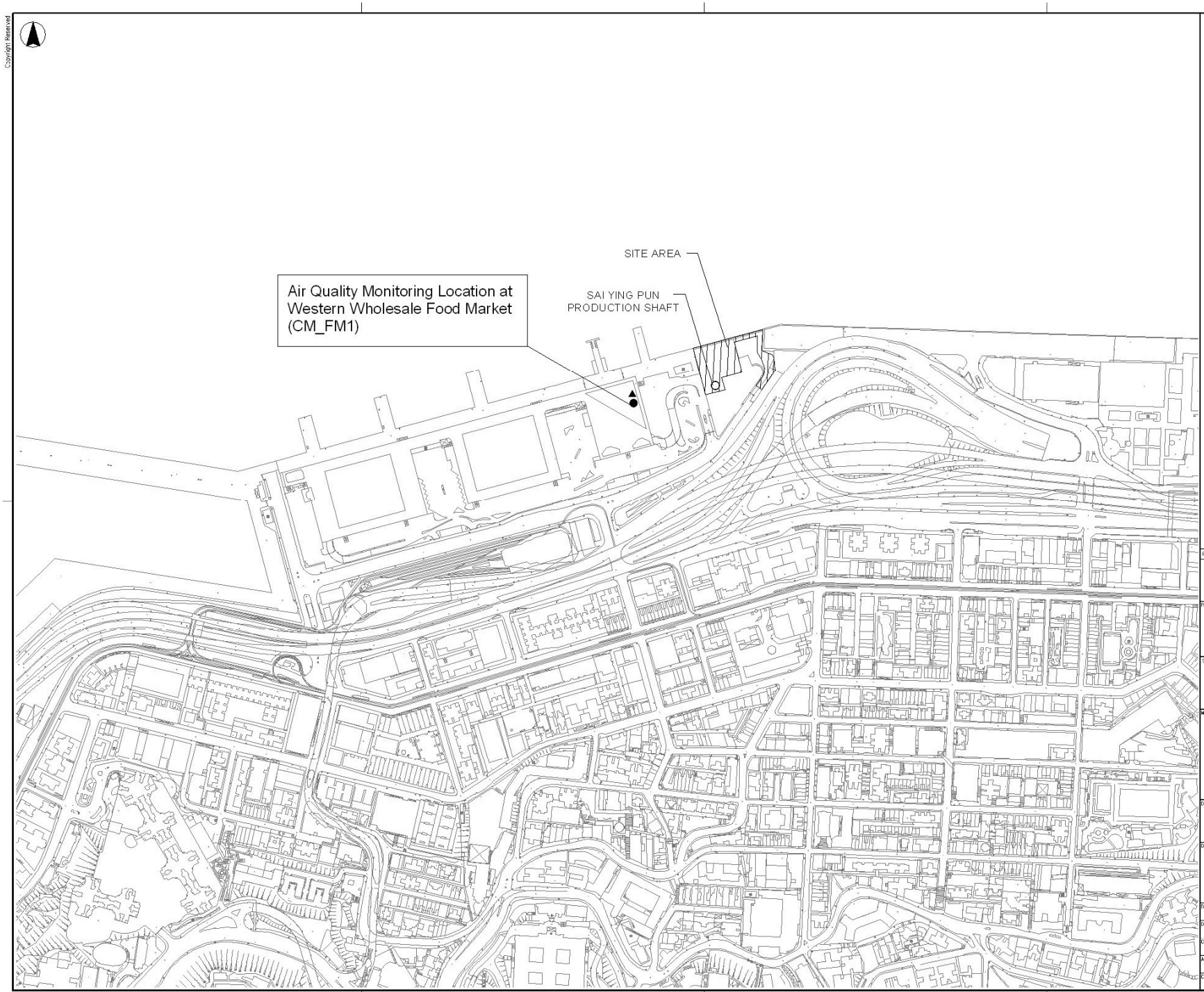

LEGEND
- ▲ AIR SENSITIVE RECEIVERS
- ● DUST MONITORING STATION

0 50 100 150 Meters

Rev	Description	Date	Dgn	Chk	Auth

土木工程拓展署
DRAINAGE SERVICES DEPARTMENT
HARBOUR AREA TREATMENT SCHEME DIVISION

Project Title
CONTRACT NO. DC/2007/24
HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM
FROM ABERDEEN TO SAI YING PUN

Supervising Officer
AECOM
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LEIGHTON 禮頓 LNS
Leighton - LNS Joint Venture

Designer
ATKINS

Drawing Title
CONSTRUCTION DUST
MONITORING STATION
AT FUNG MAT ROAD SITE

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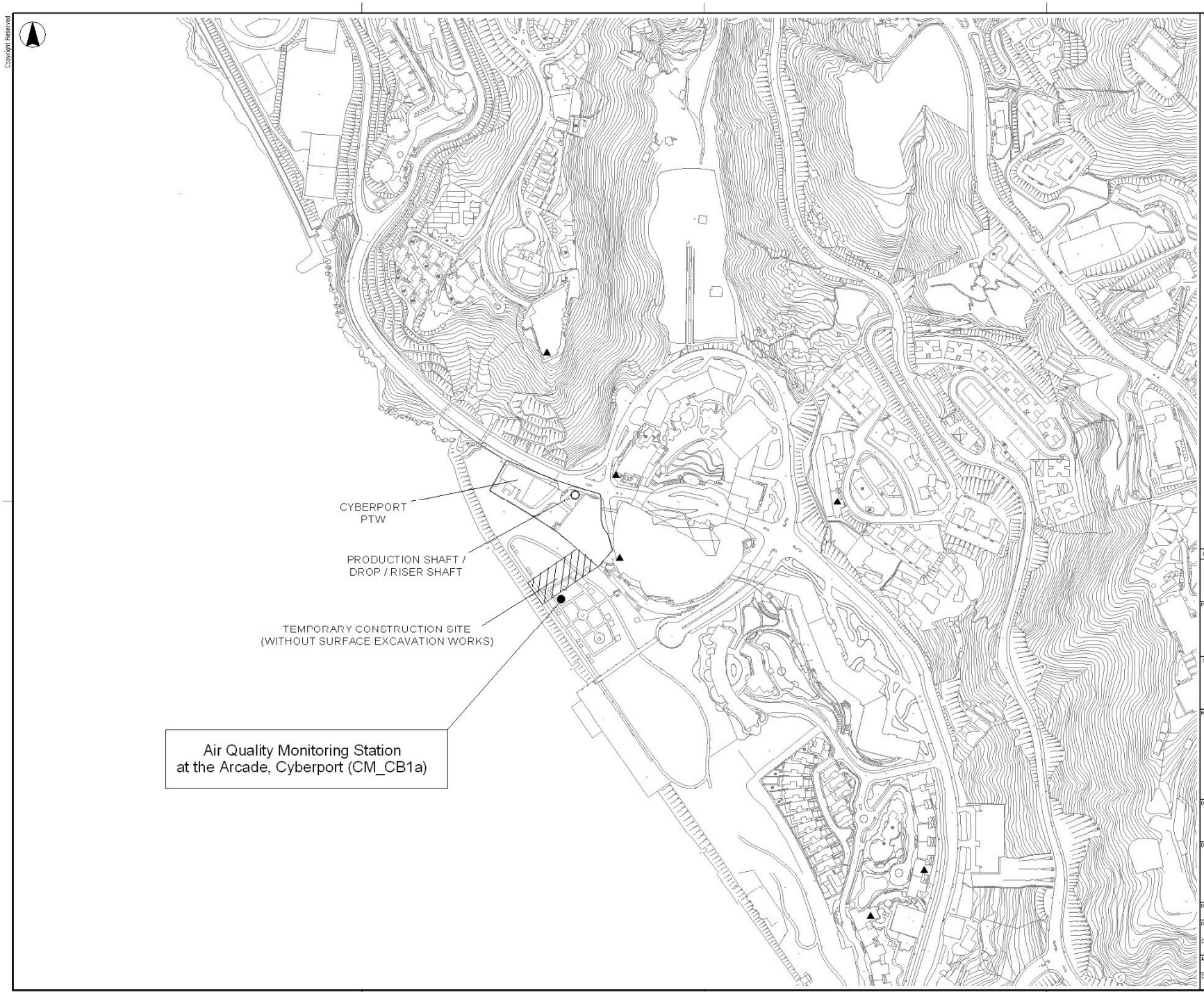

LEGEND
▲ AIR SENSITIVE RECEIVERS
● DUST MONITORING STATION
0 50 100 150 Meters

Rev	Description	Date	Dgn	Chk	Auth

DRAINAGE SERVICES DEPARTMENT
HARBOUR AREA TREATMENT SCHEME DIVISION

Project title
CONTRACT NO. DC/2007/24
HARBOUR AREA TREATMENT SCHEME STAGE 2A
CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM
FROM ABERDEEN TO SAI YING PUN

Supervising Officer
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Drawing title
CONSTRUCTION DUST
MONITORING STATION AT
CYBERPORT PTW

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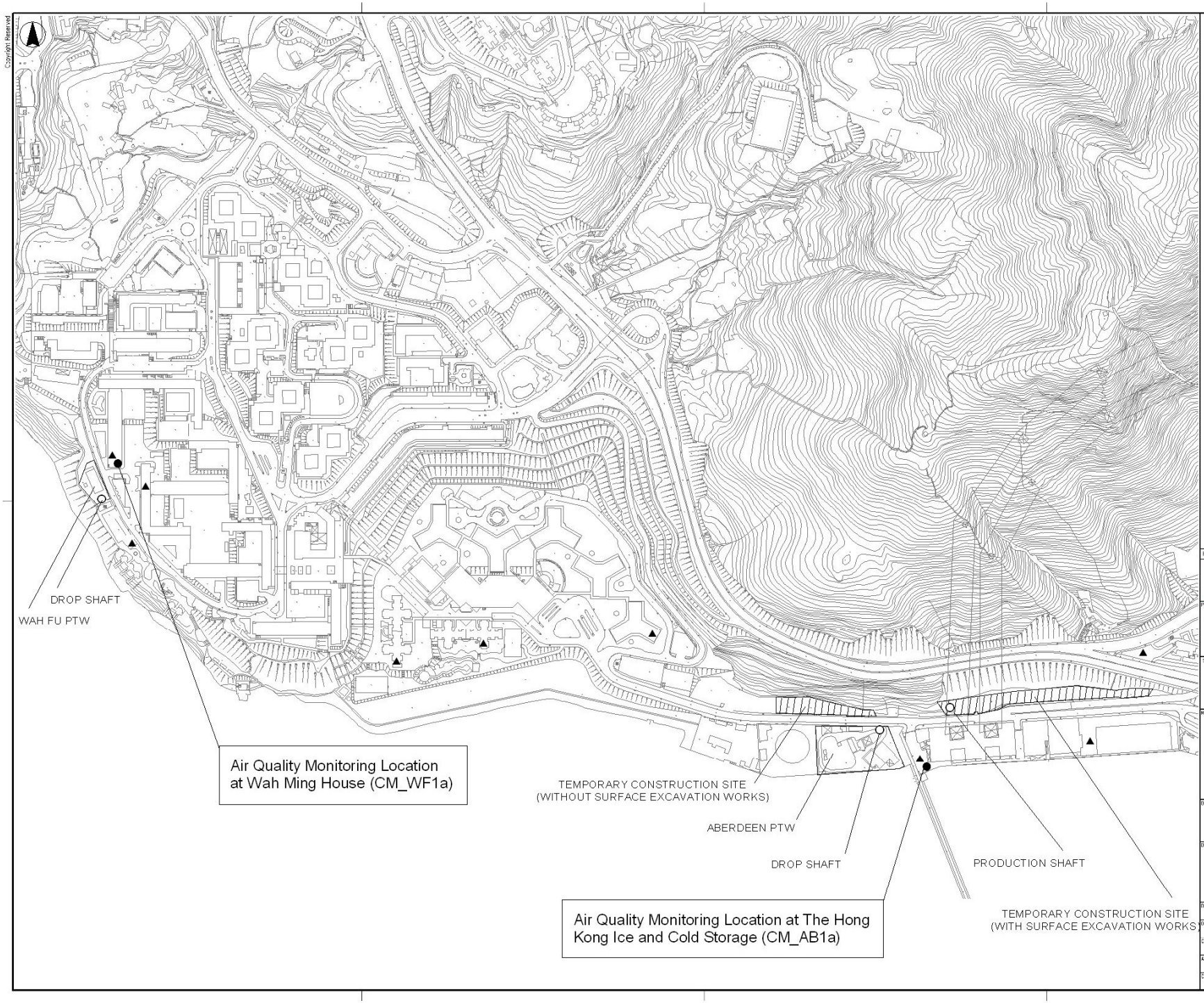

Rev	Description	Date	Dgn	Chk	Auth

DRAINAGE SERVICES DEPARTMENT
HARBOUR AREA TREATMENT SCHEME DIVISION

Project Title
CONTRACT NO. DC/2007/24
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Supervising Officer
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Metcalf & Eddy - AECOM Joint Venture

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Drawing Title
CONSTRUCTION DUST MONITORING STATION AT WAH FU AND ABERDEEN PTW

Designed	Scale at A1
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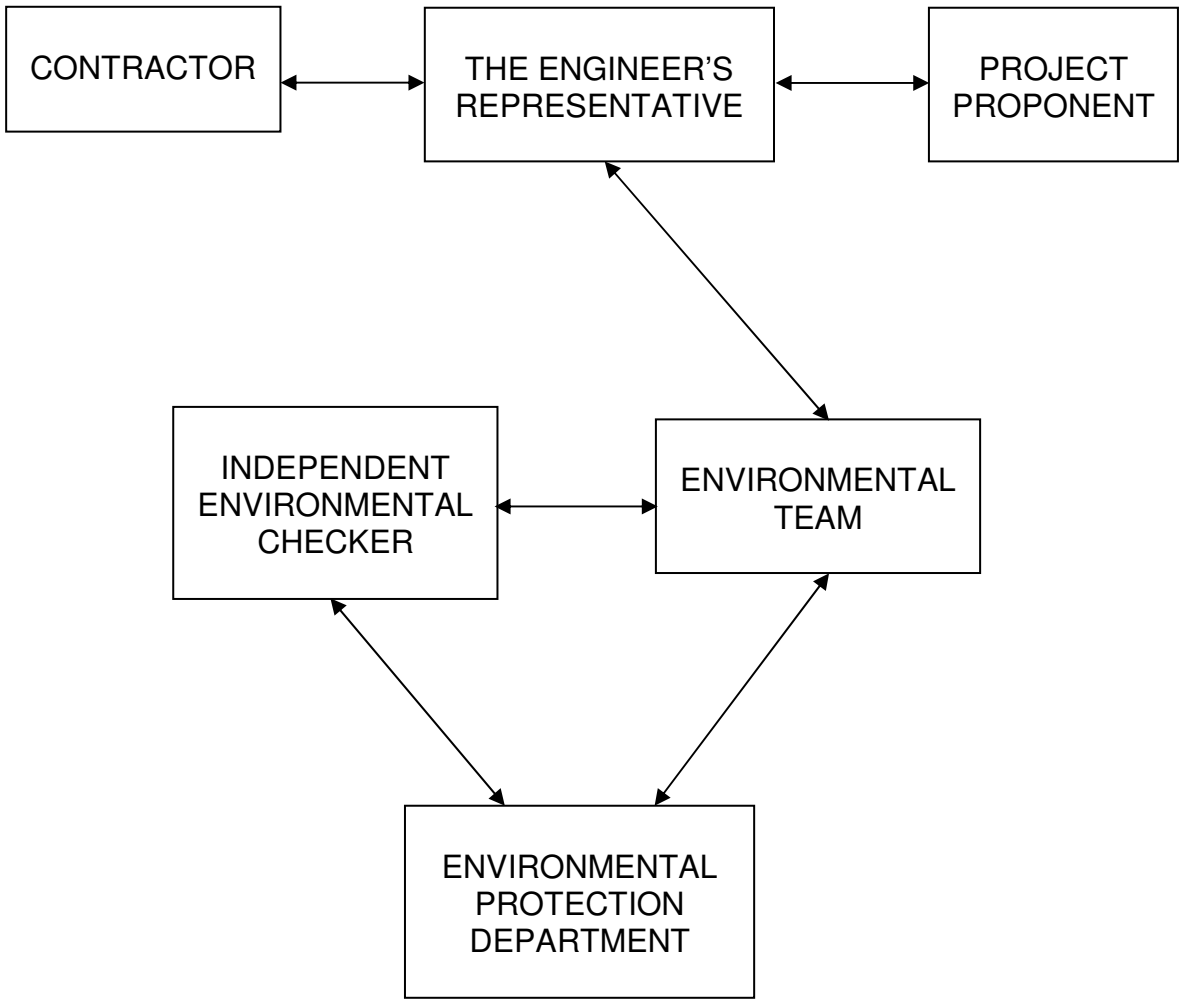
APPENDIX A

PROJECT ORGANISATION AND CONTACT DETAILS

Project Organisation



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↔ Line of communication

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APPENDIX B

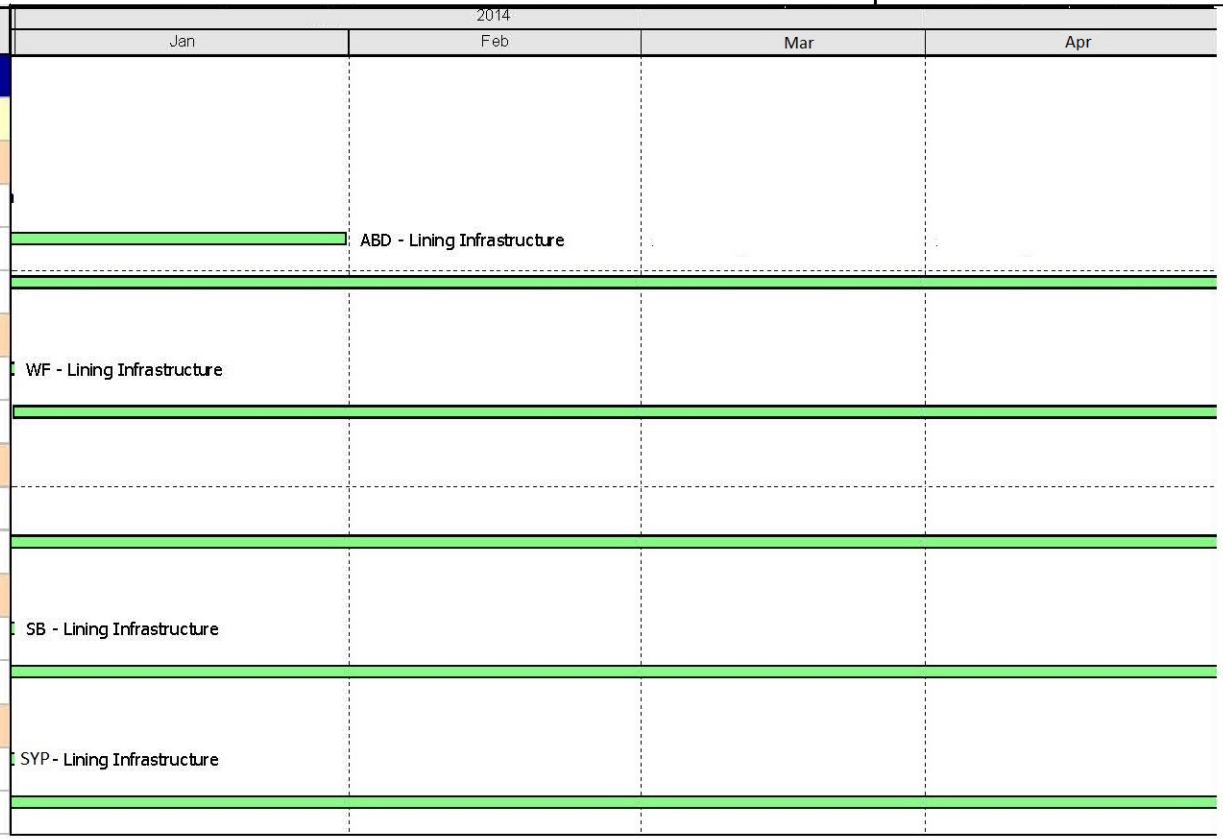
THE CONTRACTOR'S 3-MONTH CONSTRUCTION PROGRAMME

Data Date:

H2488-PD3M

3 Months Rolling Programme

Activity ID	Activity Name
HATS2A - 3 Months Programme	
3 Months Programme	
Aberdeen	
ABD009	ABD - Tunnel P Excavation
ABD013	ABD - Lining Infrastructure
ABD017	ABD - Lining
Wah Fu	
WF007	WF - Lining Infrastructure
WF009	WF - Lining
Cyberport	
CP001	CP - Tunnel P Excavation
CP003	CP - Tunnel Lining
Sandy Bay	
SB009	SB - Lining Infrastructure
SB011	SB - Lining
Sai Ying Pun	
	SYP- Lining Infrastructure
	SYP- Lining



Current Milestone
Actual Work
Critical Remaining Work
Remaining Work

Contract No DC/2007/24
HATS - Harbour Area Treatment Scheme (Stage 2A)
Leighton - LNS Joint Venture

Date	Revision	Chec...	Approved
30-Nov-13	3 Month Programme		

APPENDIX C

EVENT AND ACTION PLAN

Event/ Action Plan for Construction Noise

Event	Action			
	ET	IEC	ER	Contractor
Action Level being exceeded	1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures.	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals.
Limit Level being exceeded	1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.

Event/ Action Plan for Construction Air Quality

Event	Action			
	ET	IEC	ER	Contractor
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 5. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Landscape and Visual Impact - Construction Phase

Action Level	Environmental Team Leader (ETL)	Independent Environmental Checker (IEC)	Engineer's Representative (ER)	Contractor
Non-conformity on one occasion	1. Identify source 2. Inform the IEC and the ER 3. Discuss remedial actions with the IEC, the ER and the Contractor 4. Monitor remedial action until rectification has been completed	1. Check report 2. Check the Contractor's working method 3. Discuss with the ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures	1. Notify the Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake remedial measures or any necessary replacement
Repeated Non-conformity	1. Identify source 2. Inform the IEC and the ER 3. Increase monitoring (site audit) frequency 4. Discuss remedial actions with the IEC, the ER and the Contractor 5. Monitor remedial actions until rectification has been completed 6. If exceedance stops, cease additional monitoring (site audit)	1. Check report 2. Check the Contractor's working method 3. Discuss with the ER and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 5. Supervise implementation of remedial measures	1. Notify the Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake remedial measures or any necessary replacement

APPENDIX D

MITIGATION MEASURES CHECKLIST

EIA Ref.	Final EM&A Manual Ref.	Environmental Aspect	Mitigation Measures	Timing	Compliance Status: √ = compliant; x = non-compliant; N/A = not applicable	
					Status	Remarks
3.64	2.55	Air Quality Control	• Watering twice per day within the worksites at North Point PTW, Wan Chai East PTW, Fung Mat Road Site, Sandy Bay PTW, Wah Fu PTW, Aberdeen PTW and SCS worksite at Aberdeen; • Watering 4 times per day within worksites at the Central PTW; • Barging points, if any, should be continuous watering throughout the whole unloading process; and • Watering 8 times per day within worksites at the SCS works area at Wan Chai East and North Point, SCISTW and the Disinfection Facilities of SCISTW.	During Construction	√	
3.74	2.54	Air Quality Control	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts. • Skip hoist for material transport should be totally enclosed by impervious sheeting; • Vehicle washing facilities should be provided at every vehicle exit point; • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore; • Where a site boundary adjoins a road, streets or other areas accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit; • Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather; • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines; • Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs; • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; • Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit; • Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides;	During Construction	√	
3.76	2.58	Air Quality Control	Good housekeeping for SCISTW and PTWs listed below should be followed to ameliorate any odour impact from the plant and these standard practices should be included in the plant operator manual. • Screens should be cleaned regularly to remove any accumulated organic debris • Grit and screening transfer systems should be flushed regularly with water to remove organic debris and grit • Grit and screened materials should be transferred to closed containers to minimize odour escape • Scum and grease collection wells and troughs should be emptied and flushed regularly to prevent putrefaction of accumulated organics • Skim and remove floating solids and grease from primary clarifiers regularly • Frequent sludge withdrawal from tanks is necessary to prevent the production of gases • Sludge cake should be transferred to closed containers • Sludge containers should be flushed with water regularly	During Operation	N/A	
	2.57	Air Quality Control	Fully covered design og the odour sources of the upgraded PTWs and SCISTW and the installation of deodorization system at the exhaust of ventilation system would adequately control potential odour impact.	During Operation	N/A	
3.77	2.59	Air Quality Control	To avoid excessive extraction of the foul air from the drop shafts of the sedimentation tanks and also from the effluent flume structure of SCISTW to deodorization system, the extraction vent(s) of the deodorization system should be located away from the top openings of the drop shafts.	During Design Stage	N/A	
3.80	2.6	Air Quality Control	Commissioning tests for all deodorization system should be included in the Design and Construction Contract Document.	After completion of	N/A	

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					Status	Remarks
4.56-4.61	3.21-3.24	Noise Control	Use of quiet PME, movable barriers and acoustic mats	During Construction	√	
4.67	3.25	Noise Control	Good Site Practice: • Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program. • Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program. • Mobile plant, if any, shall be sited as far away from NSRs as possible. • Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum. • Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. • Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	During Construction	√	
4.63	3.28	Noise Control	Use of acoustic louvers for air supply fans/extraction fans of transfer pumping stations and ventilation fans of deodourization unit at Sandy Bay PTW, Cyberport PTW and Wah Fu PTW	During Operation and Design Stage	N/A	
4.64		Noise Control	The maximum allowable sound power level (SWL) of each new transformer at Sandy Bay PTW shall be limited to 89 dB(A).	During Operation and Design Stage	N/A	
6.349 - 6.375		Water Quality Control	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	During Construction	√	
6.376		Water Quality Control	Effluent Discharge There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.	During Construction	√	
6.377		Water Quality Control	Accidental Spillage of Chemicals Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	During Construction	√	
6.378		Water Quality Control	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these	During Construction	√	

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					Status	Remarks
6.379		Water Quality Control	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	During Construction	√	
6.380		Water Quality Control	Construction Works in Close Proximity of Storm Drains or Seafront To minimize the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable. • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.	During Construction	√	
6.381		Water Quality Control	Temporary Sewage Bypass It is recommended that the temporary sewage bypass required for (i) the modification to the existing pumping station at SCISTW and (ii) the interconnection between the existing main pumping station and the new pumping station on Stonecutters Island, if needed, should be scheduled at the same time as far as practicable in order to minimise the temporary discharge duration. It is also recommended that all the modification and interconnection to the existing facilities (including the modification to the existing NWKPS) should be programmed to avoid temporary sewage bypass in wet or bathing season (March to October) to minimize the potential impacts. Relevant government departments including EPD and LCSD should be informed of the planned sewage bypass prior to any discharge. During the sewage bypass period, water quality monitoring should be carried out at the water sensitive receivers to quantify the water quality impacts and to determine when the baseline water quality conditions are restored. Also, a framework of the response procedures has been formulated to minimize the impact of temporary	During Construction	✓	
6.344		Water Quality Control	Dual power supply, standby facilities for the main treatment units and standby equipment parts / accessories should be provided as far as possible at the SCISTW to minimize the chance of emergency discharge.	During Operation and Design Stage	N/A	
6.344		Water Quality Control	The response procedure and monitoring requirements for emergency discharge as stated in EM&A Manual should be followed.	During Operation	N/A	
6.345		Water Quality Control	Standby unit(s) and dual (backup) power supply would be provided at all the Stage 2 PTWs to reduce the risk of equipment breakdown at the PTWs.	During Operation and Design Stage	N/A	

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6.346		Water Quality Control	In case of total power outage of the dechlorination plant, the uninterruptible power supply (UPS) system to be provided would switch the power supply of the sodium bisulphite dosing pump to a backup battery almost instantaneously, allowing continuous dosage of sodium bisulphite for at least half an hour so that sufficient time can be provided for shutting down the chlorination plant to avoid the possibility of discharge of chlorinated effluent.	During Operation and Design Stage	N/A	
6.347		Water Quality Control	The model predicted that if Stage 2B is not implemented for HATS in 2021 as scheduled, the nutrient contents (both P and N) in the marine water would ultimately increase to exceed the baseline Stage 1 level when the HATS flow is reaching its design capacity of 2.45M m3/day. It is recommended that the future review study for Stage 2B should review the validity of the model predictions provided in this EIA and confirm the need of enhanced nutrient removal for HATS after 2021.	During Operation and Design Stage	N/A	
6.348		Water Quality Control	It should be noted that the mixing zone for TIN predicted for Stage 2B was large with an area of about 30 km2 and the area of exceedance would encroach on the nearby water sensitive receivers (e.g. Ma Wan Fish Culture Zone). This is due to the elevated oxidized nitrogen assumed for the proposed nitrification process at Stage 2B as well as the increased HATS effluent flow assumed for Stage 2B. It is recommended that these water quality issues should be further investigated / assessed under the future EIA for Stage 2B. Further mitigation measures / alternative treatment designs should also be considered under the future EIA for Stage 2B to mitigate / minimize the potential TIN exceedances.	Investigation Stage of Stage 2B	N/A	
9.107	7.8	Waste Management	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimise wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimize the use of timber formwork.	During Construction	N/A	
9.109	7.10	Waste Management Implication	All waste materials should be segregated into categories covering: • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill.	During Construction	√	
9.113	7.15	Waste Management Implication	Recommendations to achieve waste reduction include:- • Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals; • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force; • Any unused chemicals or those with remaining functional capacity shall be recycled; and • Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	During Construction	√	
9.115	7.14	Waste Management Implication	Recommendations for good site practices during construction activities include:- • Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site • Training of site personnel in proper waste management and chemical waste handling procedures • Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials. • Provision of sufficient waste disposal points and regular collection of waste • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors	During Construction	√	

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9.125	7.14	Waste Management Implication	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94	During Construction	N/A	
9.131	7.26	Waste Management Implication	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.	During Construction	√	
9.133	7.22	Waste Management Implication	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.	During Construction	√	
9.135	7.24	Waste Management Implication	The recyclable component of the municipal waste generated by the workforce, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.	During Construction	√	
9.137	7.28	Waste Management Implication	If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	During Construction	√	
9.142	7.32 ~ 7.33	Waste Management Implication	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment Quality Report. The marine deposit should be disposed of at the disposal site designated by the Marine Fill Committee (MFC) or Director of Environmental Protection (DEP) depending on the test results.	During Construction	N/A	
9.148	7.36	Waste Management Implication	The sludge tanks should be air-tighten. Rotating brushes or other alternative devises should be installed at the upper frame of the sludge tank washing facilities to provide better cleaning of the surface around the top loading opening of the sludge tanks. Prior to making such provision, the top covers of the sludge transfer tanks should be water cleaned manually after unloading.	During Construction	N/A	
9.150	7.35	Waste Management Implication	Since the air tightness of tankers highly relies on the effectiveness of rubber seals at the loading openings and unloading doors, odour leakage from tankers are commonly resulted from the aging rubber seals. It is recommended to develop a preventive maintenance programme for rubber seals of loading openings and unloading doors of sludge transfer tanks to ensure the tightness of covers and doors. Rubber seals should be regularly replaced within its design life as specified by suppliers.	During Construction	N/A	
10.92		Terrestrial Ecology	All the proposed construction activities would be confined to developed area and wasteland of very low ecological value.	Design stage	√	
10.93		Terrestrial Ecology	To implement effective noise mitigation recommended in Section 4.	During Construction	√	
10.94		Terrestrial Ecology	Dust control practices such as regular watering, complete coverage of any aggregate or dusty material storage piles, and re-schedule of dusty activities during high-wind conditions as well as other measures recommended in Section 3, should be implemented.	During Construction	√	
10.95		Terrestrial Ecology	Fences/hoardings should be erected and installed along the boundary of the works areas.	During Construction	√	

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10.96		Terrestrial Ecology	Standard good site practices as suggested in Section 10 should be implemented.	During Construction	√	
10.97		Terrestrial Ecology	Provision of proper drainage system and runoff control measures such as use of sand/silt traps, oil/grease separators, sedimentation tanks, etc.	During Construction	√	
10.98		Terrestrial Ecology	Provision of compensatory planting of similar native tree species in no less than 1:1 compensatory ratio in terms of quality and quantity.	During Construction	N/A	
11.135		Marine Ecology	To minimize the potential indirect impacts on water quality from construction site runoff and various construction activities, the practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted.	During Construction	√	
11.136		Marine Ecology	To avoid/minimize the impact to corals, it is proposed that they are translocated to the eastern end of the existing seawall, which has similar hydrographic parameters and supports healthy growth of the same species and is thus considered as a suitable recipient site (Figure 11.13). Coral translocation should be carried out during the winter season (November- March) in order to avoid disturbance to the transplanted colonies during the spawning period (i.e. July to October).	Pre-construction	N/A	
11.137		Marine Ecology	Dredging works will not be carried out and sheet piles or silt curtains will be used to contain filling material used during demolition/re-construction of the seawall. Water quality modelling predicts that no adverse impact on water quality at the proposed recipient (Figure 11.13) site would occur during construction works. Following this, no construction phase monitoring on translocated coral would be required. However, post-translocation monitoring is suggested to be carried out every 3 months for one year. This would be carried out by a marine ecological specialist that is approved by the Director. Translocation plan for corals will be submitted to the Director for approval prior to the commencement of construction works.	Pre-construction	N/A	
11.139		Marine Ecology	It is recommended that temporary sewage bypass should be programmed to avoid temporary sewage bypass in wet or bathing season (March to October) in order to minimize the potential impacts. Relevant government departments including EPD and LCSD should be informed of the planned sewage bypass prior to any discharge. During the sewage bypass period, water quality monitoring should be carried out at the water sensitive receivers to quantify the water quality impacts and to determine when the baseline water quality conditions are restored. Also, a framework of the response procedures has been formulated to minimize the impact of temporary discharges. Details are provided in the standalone EM&A Manual.	During Construction and Design stage	√	
Table 13.7		Landscape & Visual Impact	• Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. • Existing trees to be retained on site should be carefully protected during construction. • Trees unavoidably affected by the works should be transplanted where practical. • Compensatory tree planting should be provided to compensate for felled trees. • Control of night-time lighting. • Erection of decorative screen hoarding the surrounding setting.	Pre-construction	N/A	
Table 13.8		Landscape & Visual Impact	• Aesthetic design of the façade of PTW and associated structures to harmonize with the surrounding settings. • Shrub and Climbing Plants to soften proposed structures / Roof Greening. • Buffer Tree and Shrub Planting to screen proposed associated structures. • Reinstated of disturbed area	Pre-construction	N/A	
14A.198 & 14A.203		Hazard to Life	Limiting magnitude of ground settlement associated with shafts & tunnels construction, excavation and seawall demolition to 13mm and subject to requirements from relevant authorities.	During Construction	√	

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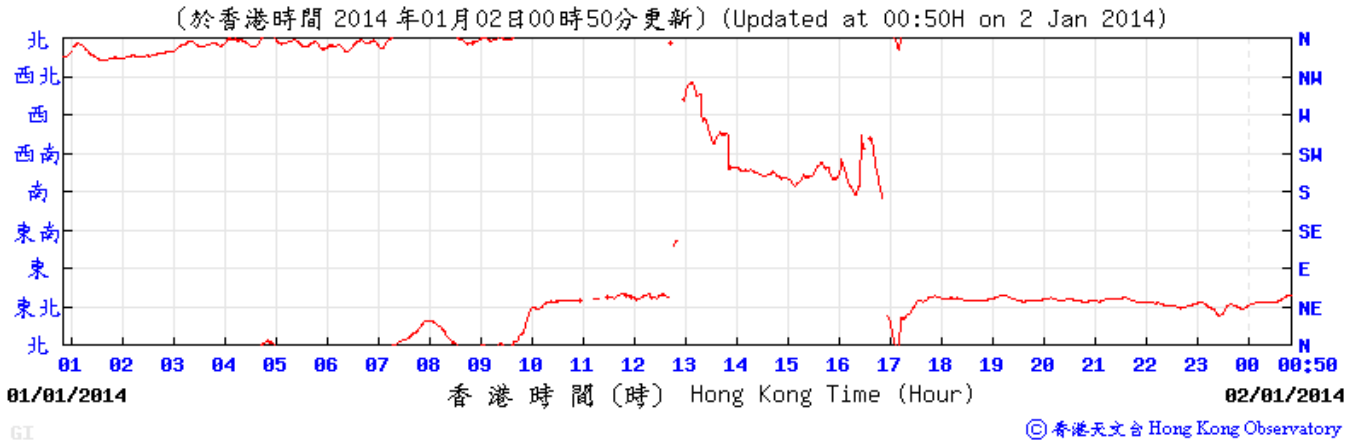
14A.199 & 14A.204		Hazard to Life	Limiting of the vibration levels associated with the blasting programme for the Tunnel P, shafts and other construction works (including demolition & reconstruction of seawall, excavation for seawater pump house at the Aberdeen PTW) at the PTW sites to a peak particle velocity of 5mm/s and subject to requirements from relevant authorities. Moving array of sensors will be used as the tunnel is advanced.	During Construction	N/A	
14A.201		Hazard to Life	Limiting use of cranes in terms of locations, lifting height, swing angle and setting up safety zone.	During Construction	√	
14A.206		Hazard to Life	Establish emergency plan and procedures	During Construction	√	
14.C78		Hazard to Life	Ensuring Quality of Chemical Supplier • Only appoint chemical suppliers with satisfactory quality system. • Request the chemical supplier to employ an independent checker to audit the quality and safety management system of the supplier • The chemical supplied to SCISTW can only be produced in designated chemical production plants and delivered directly from designated locations. This measure will be included in the chemical supply contract.	During Construction	√	
Tables 15.8 - 15.11		Cultural Heritage	The construction vibration control limit (ppv of 25mm/s) shall be strictly followed. If vibration levels are found to exceed the limit level, the Contractor shall investigate the cause of the exceedance and take immediate corrective action by reducing the rate of forward progress, as necessary, to bring PPV levels within compliance.	During Blasting for tunnel, shafts, effluent conveyance system and disinfection facilities in the vicinity of the buildings/ structures	N/A	
15.70		Cultural Heritage	Monitoring of vibration limits shall be conducted and reported as a requirement of EM&A programme	During Blasting for tunnel, shafts, effluent conveyance system and disinfection facilities in the vicinity of the buildings/ structures	N/A	

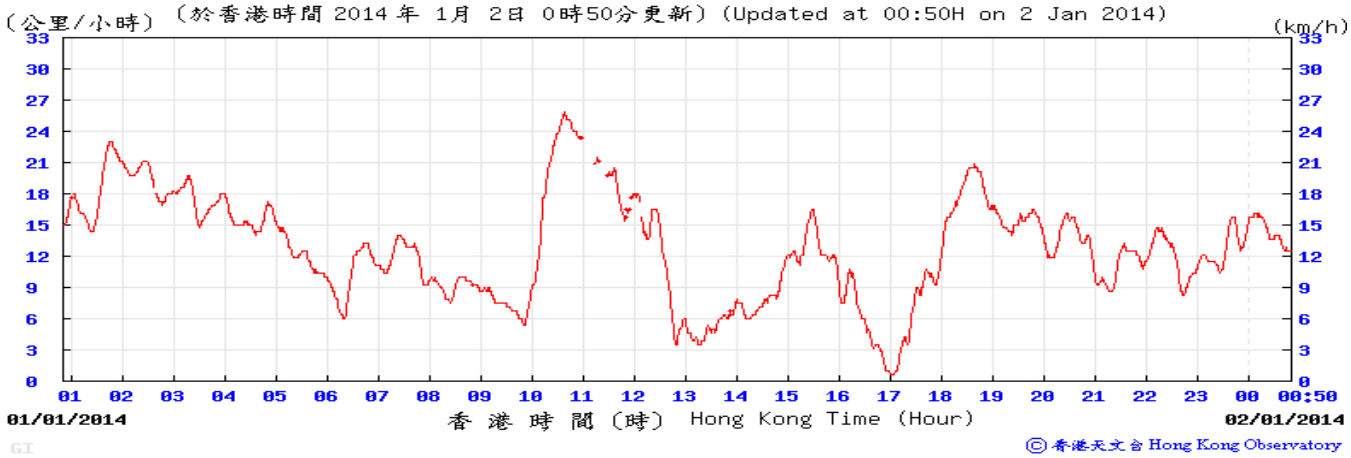
APPENDIX E

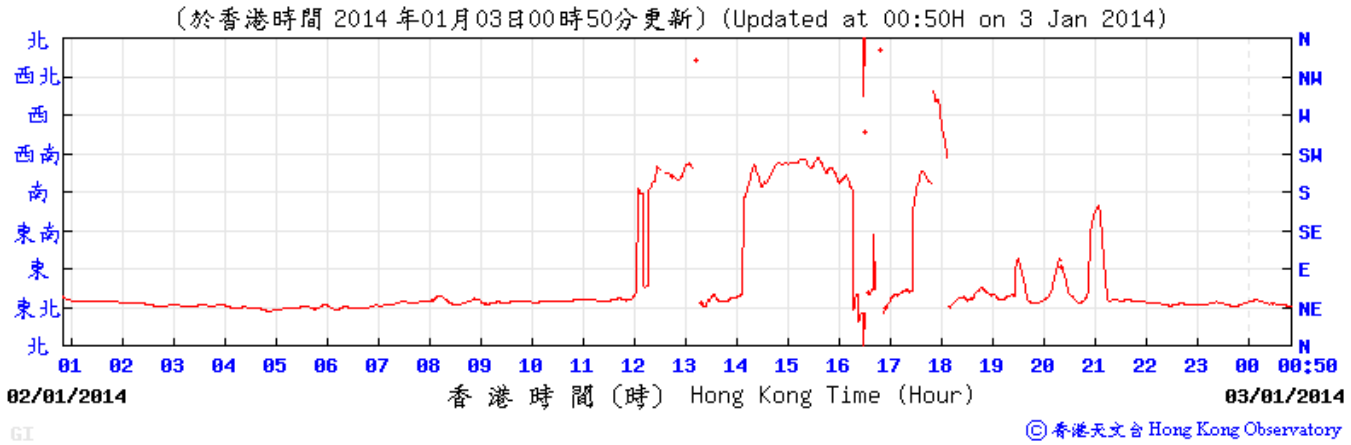
WEATHER CONDITION DURING REPORTING PERIOD

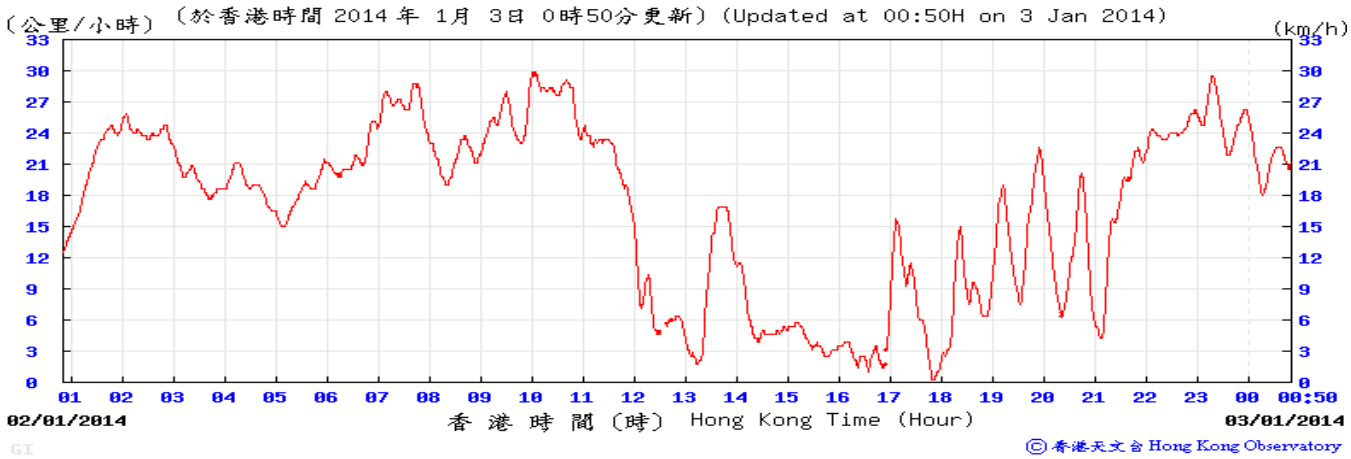
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Weather Conditions at Green Island Weather Station during Monitoring Period









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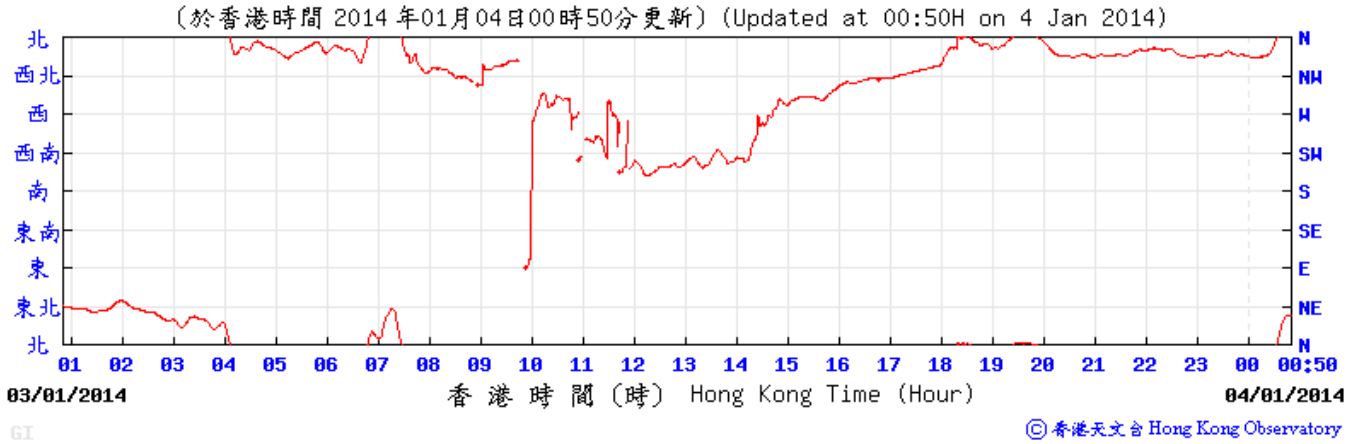

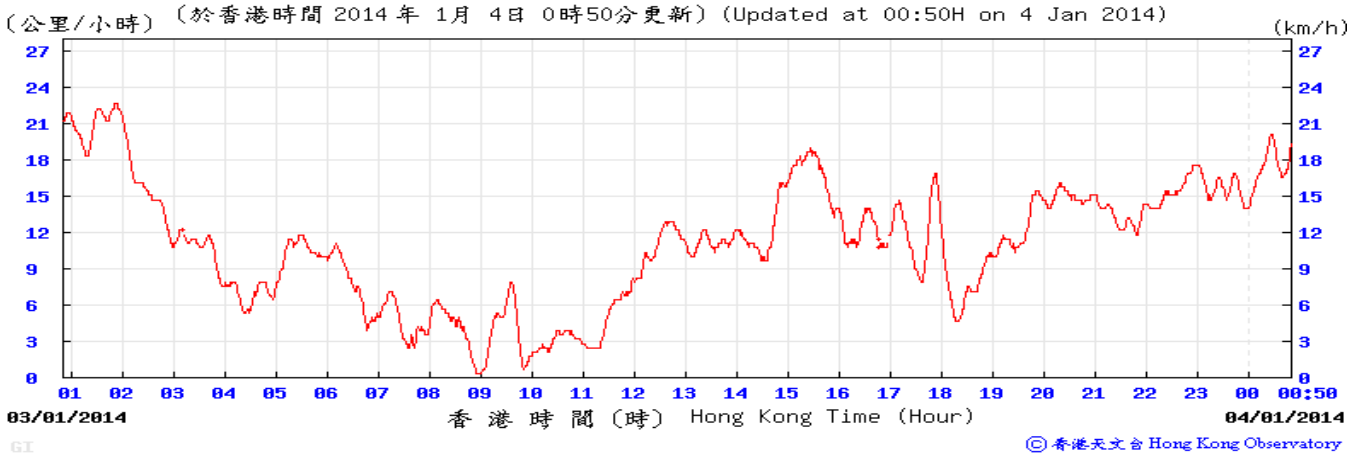

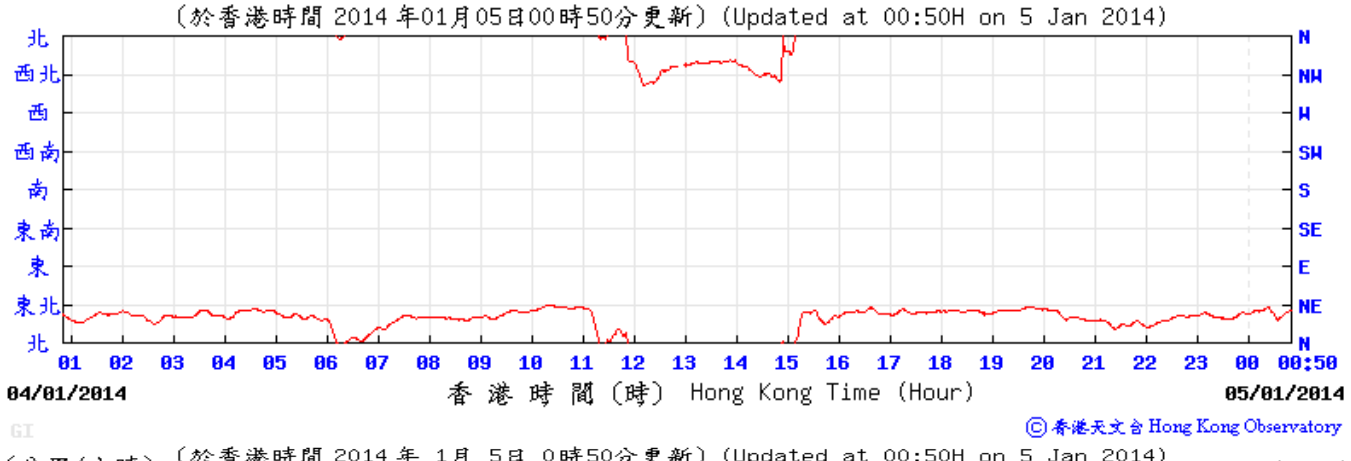

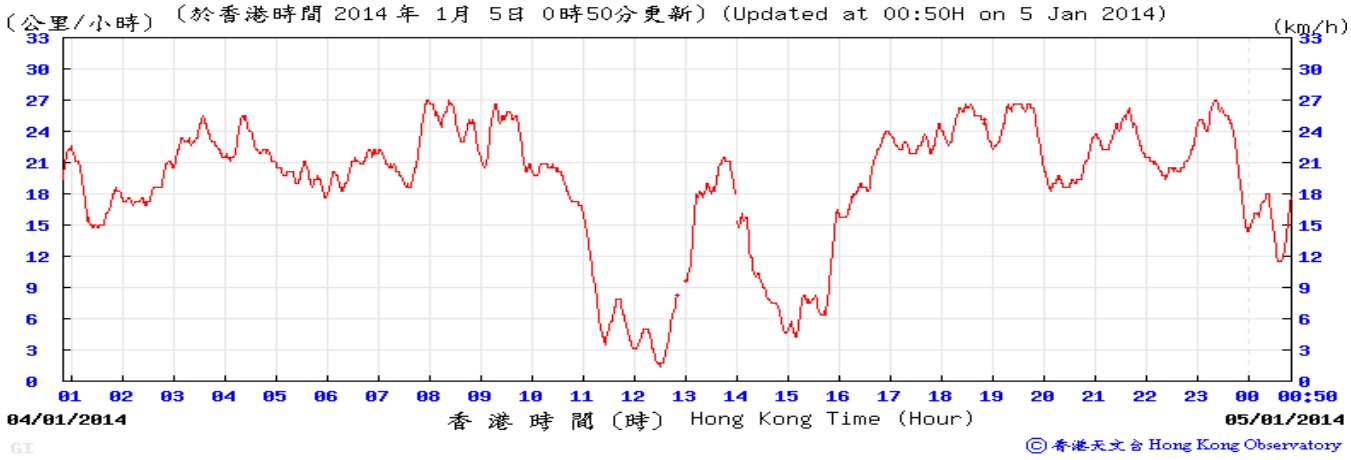

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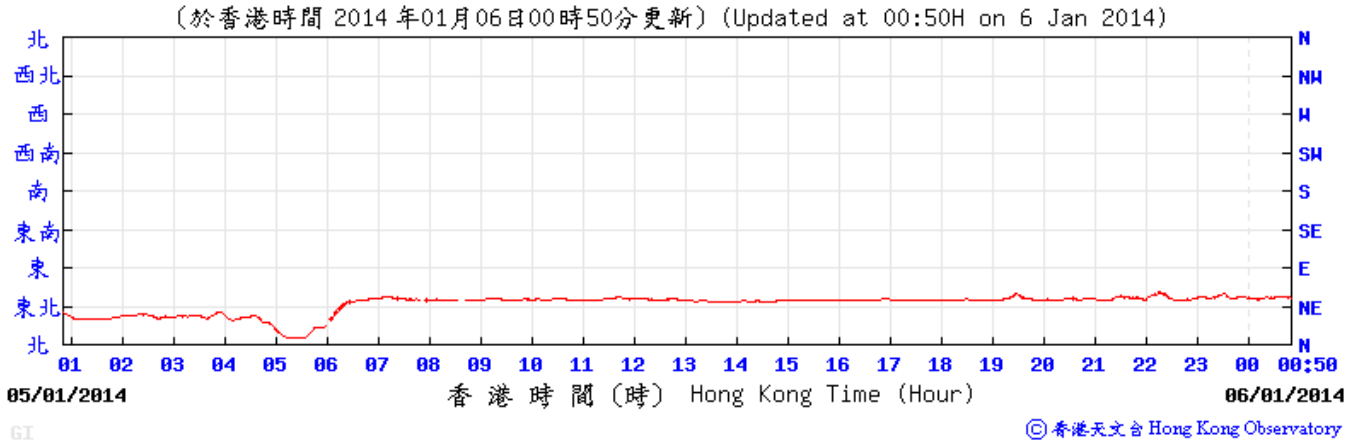

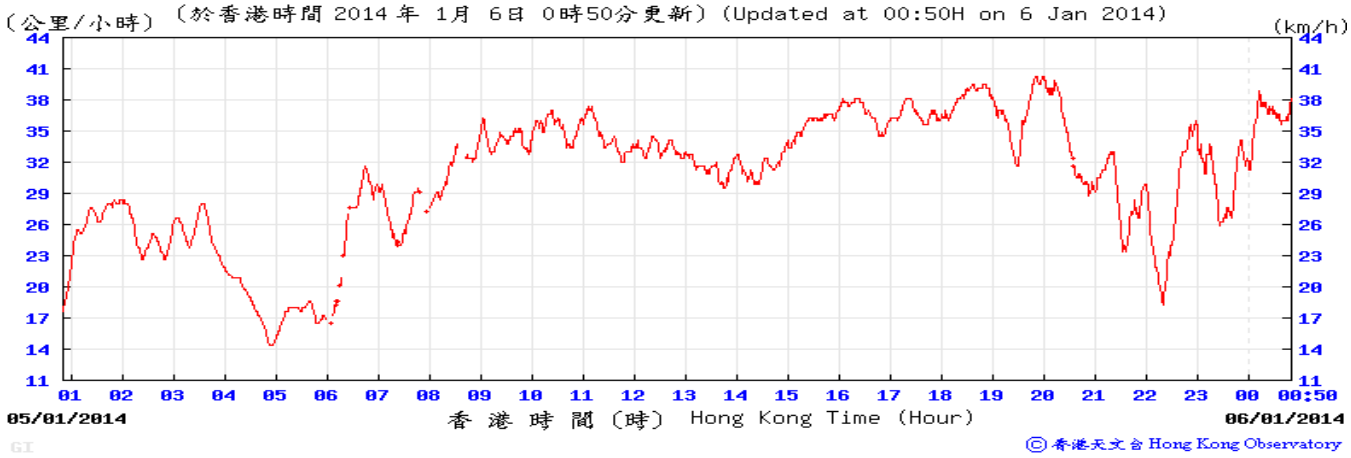

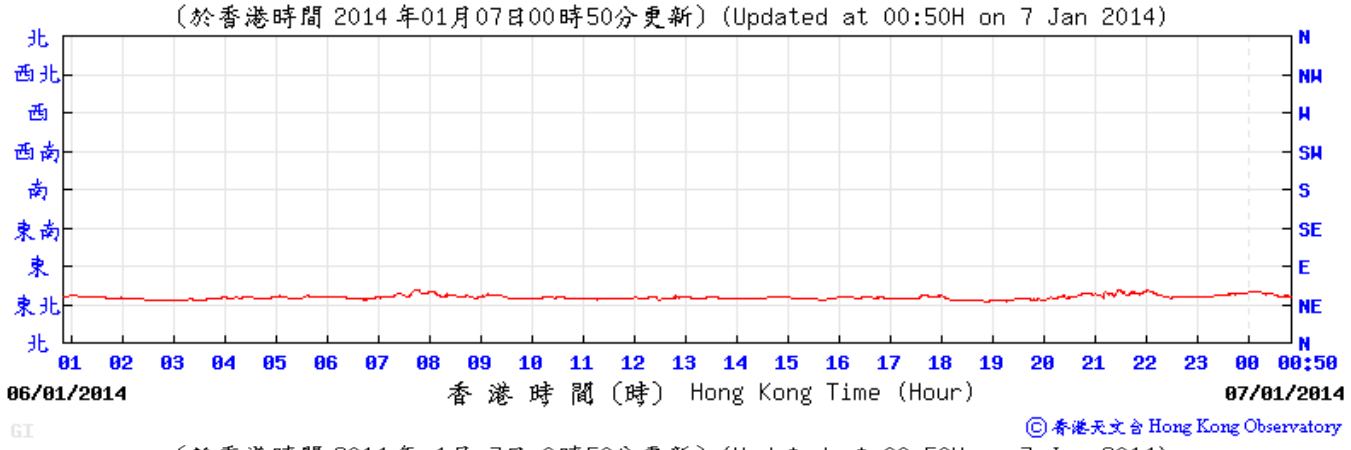

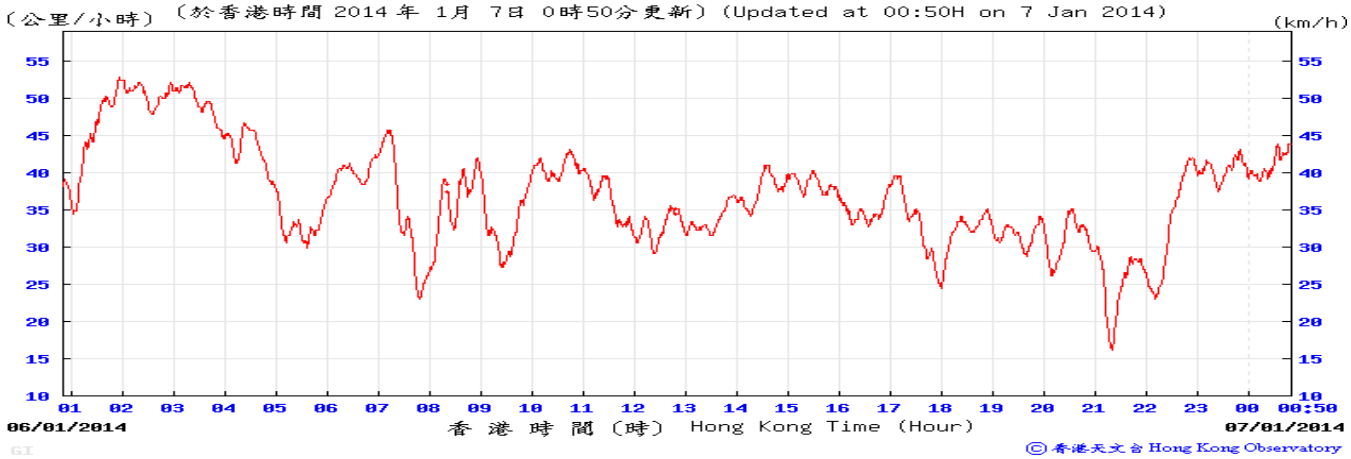

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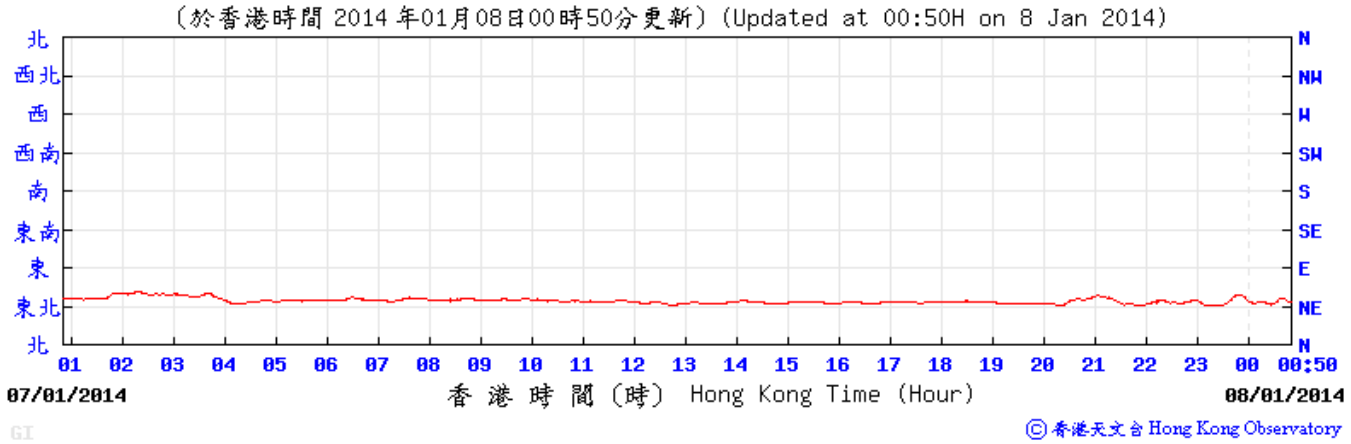
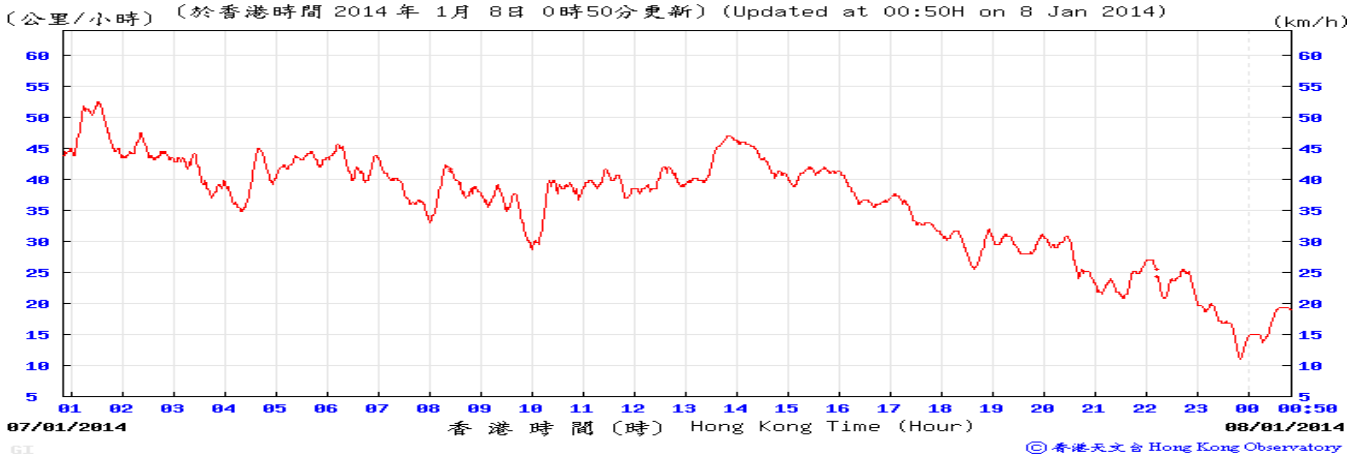
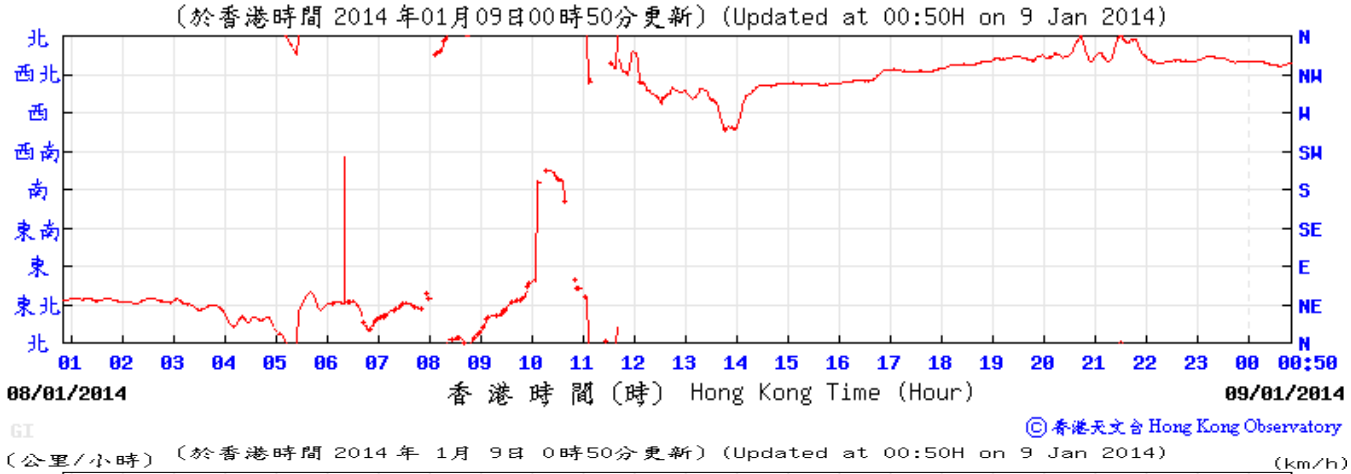
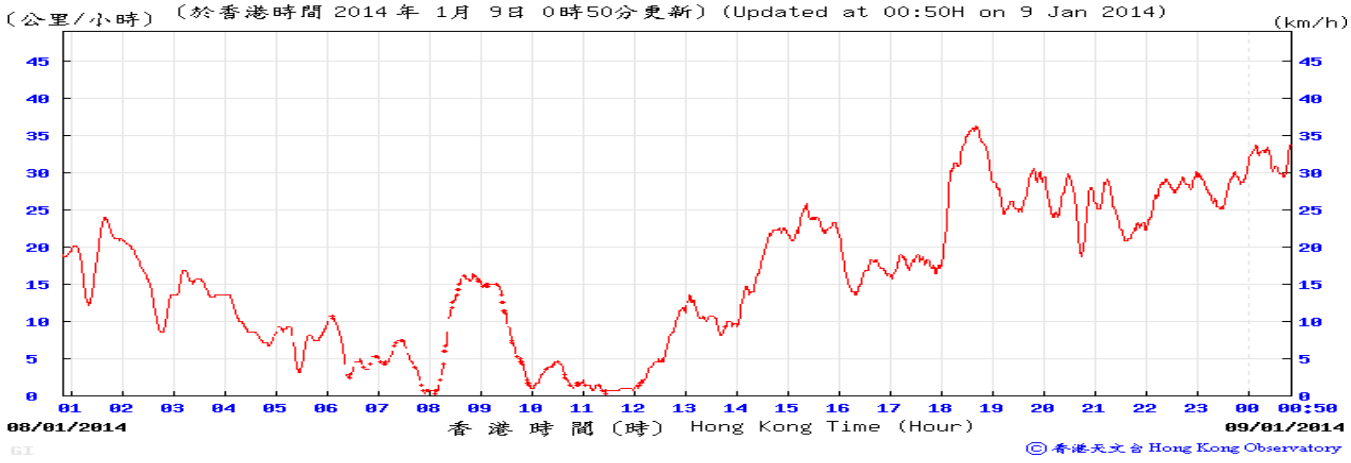


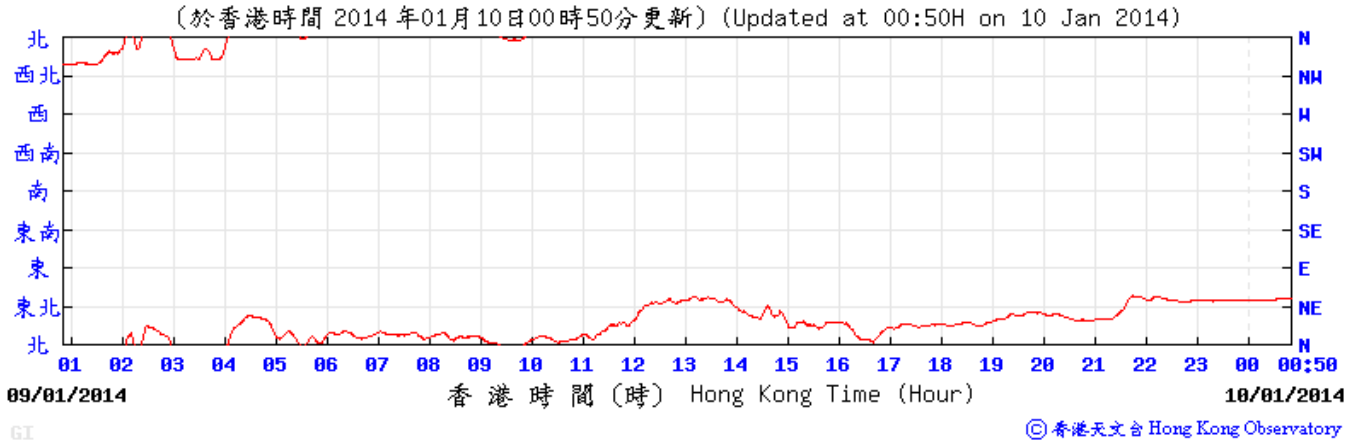


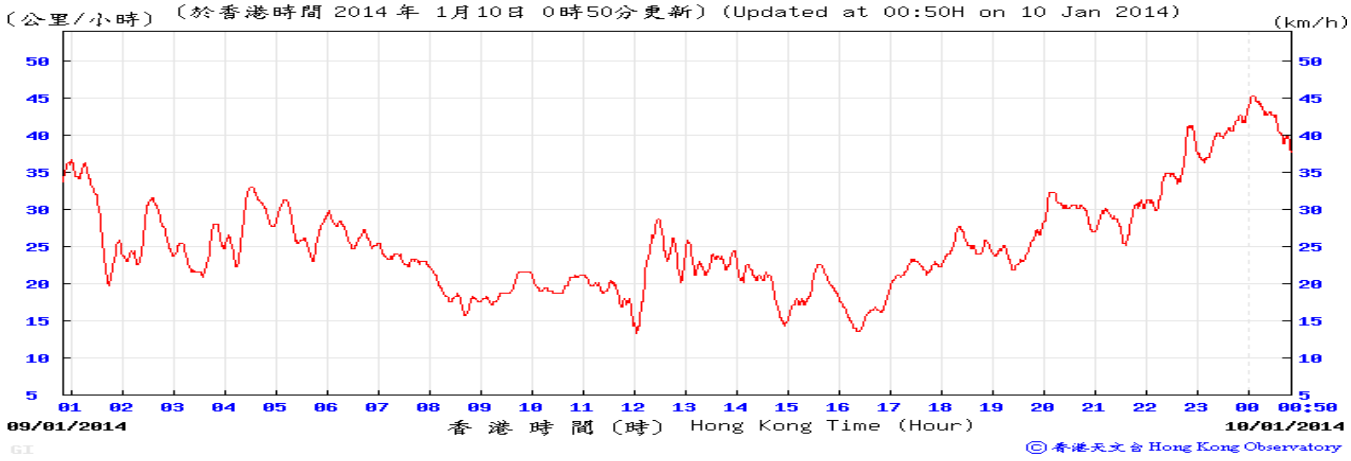


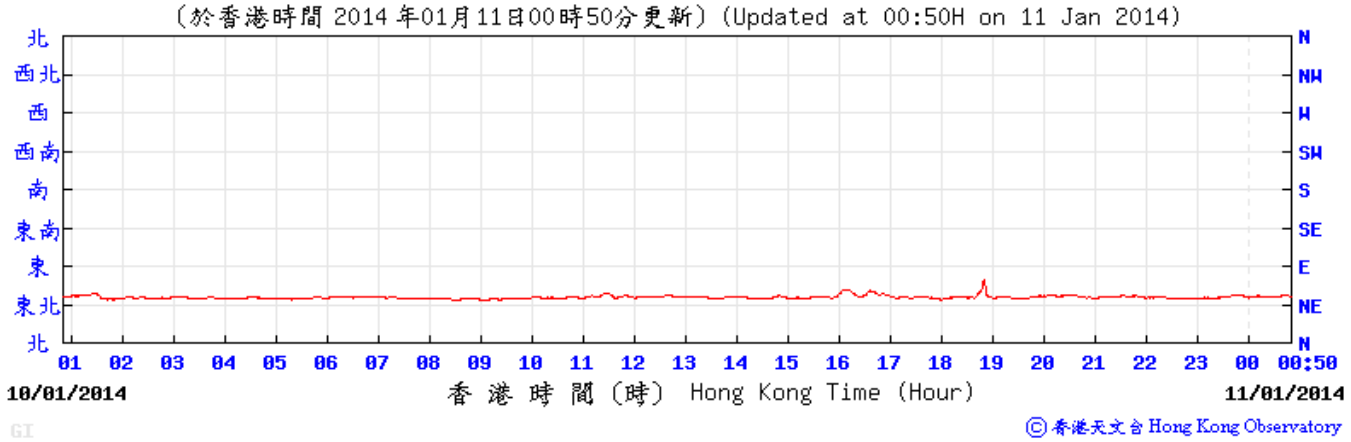


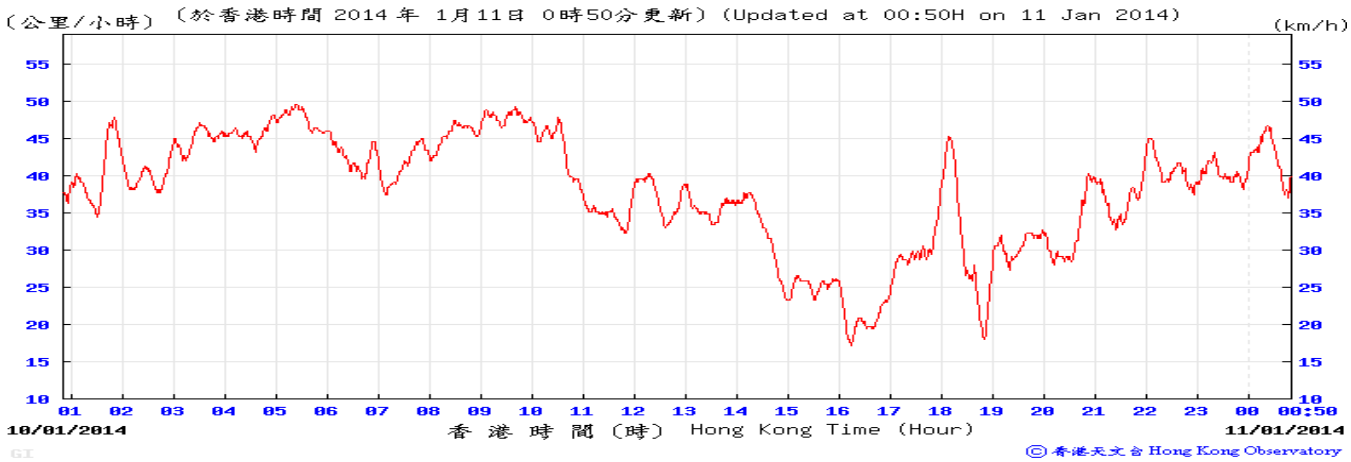
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Weather Conditions at Green Island Weather Station during Monitoring Period









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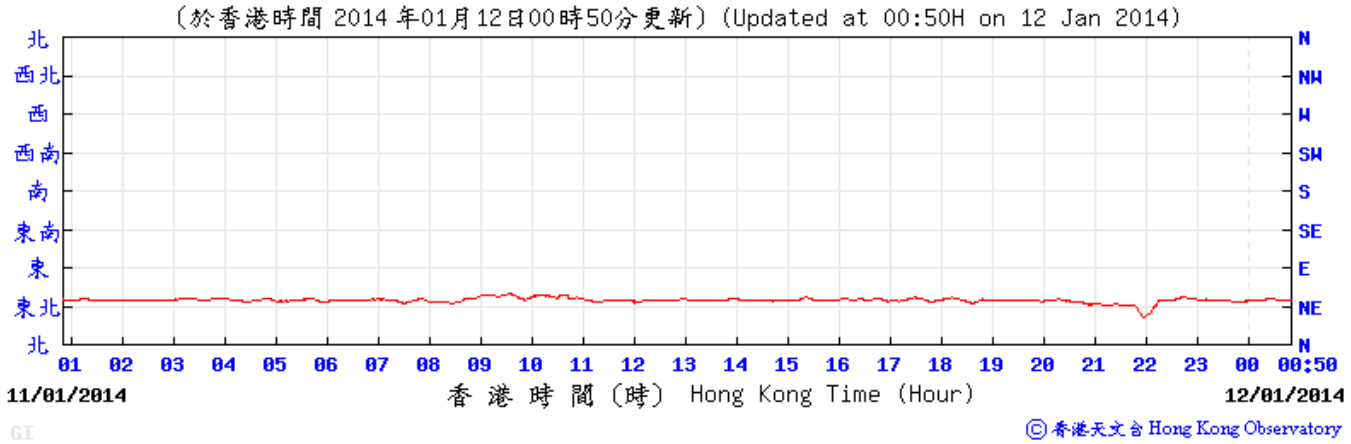

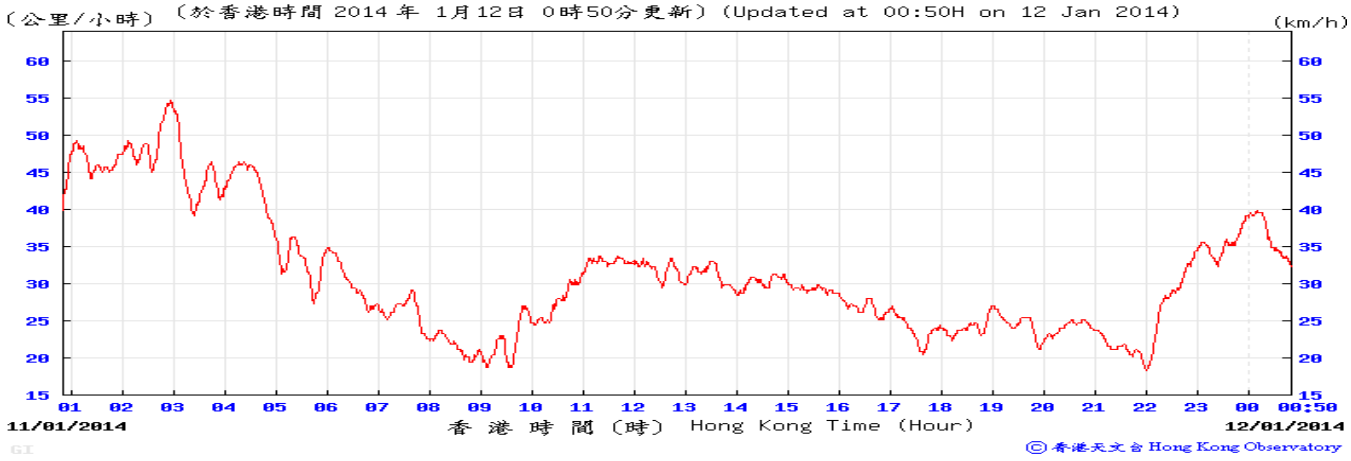

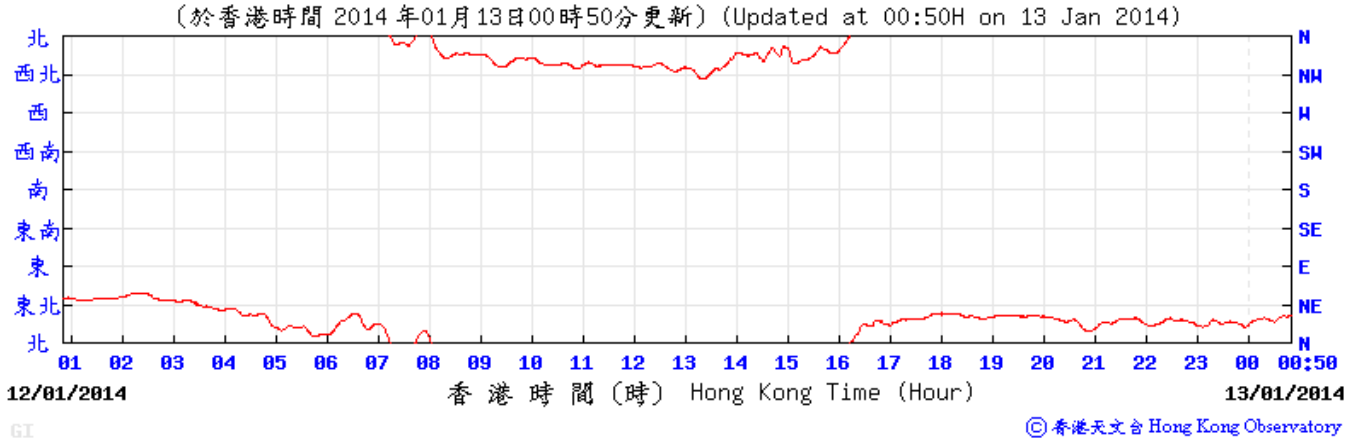

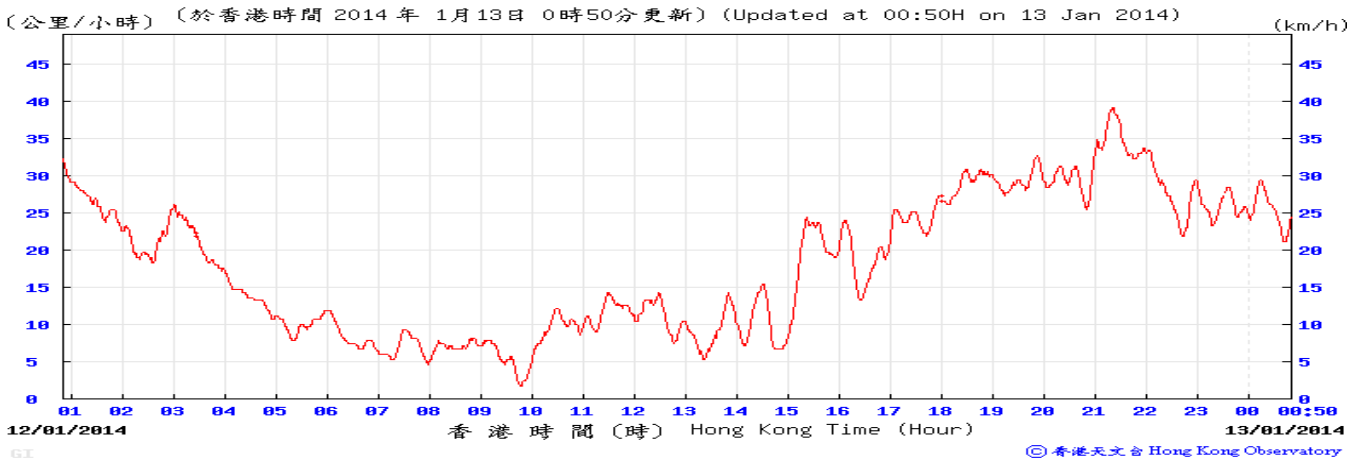

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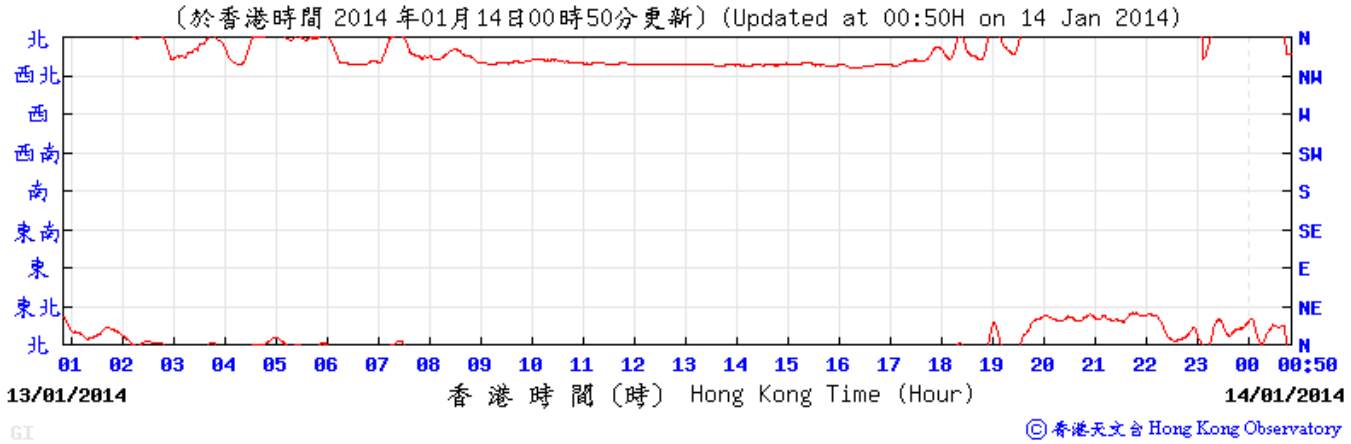

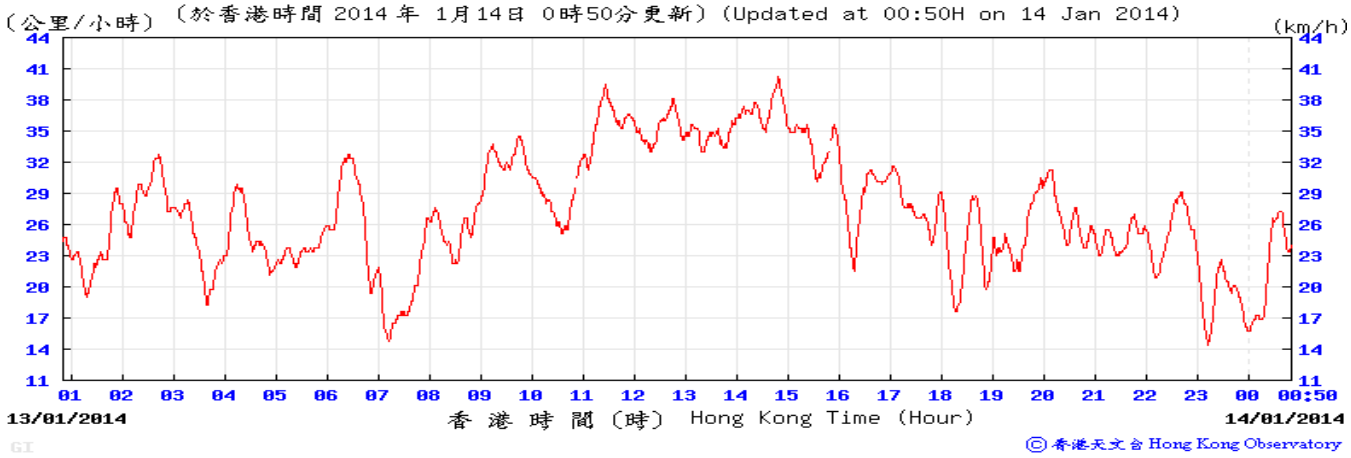

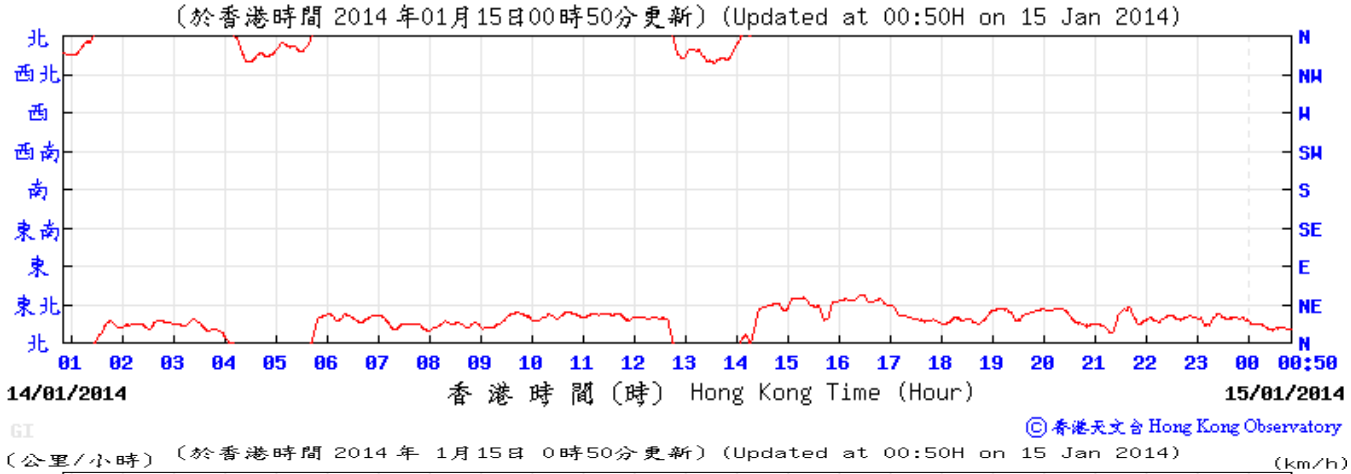

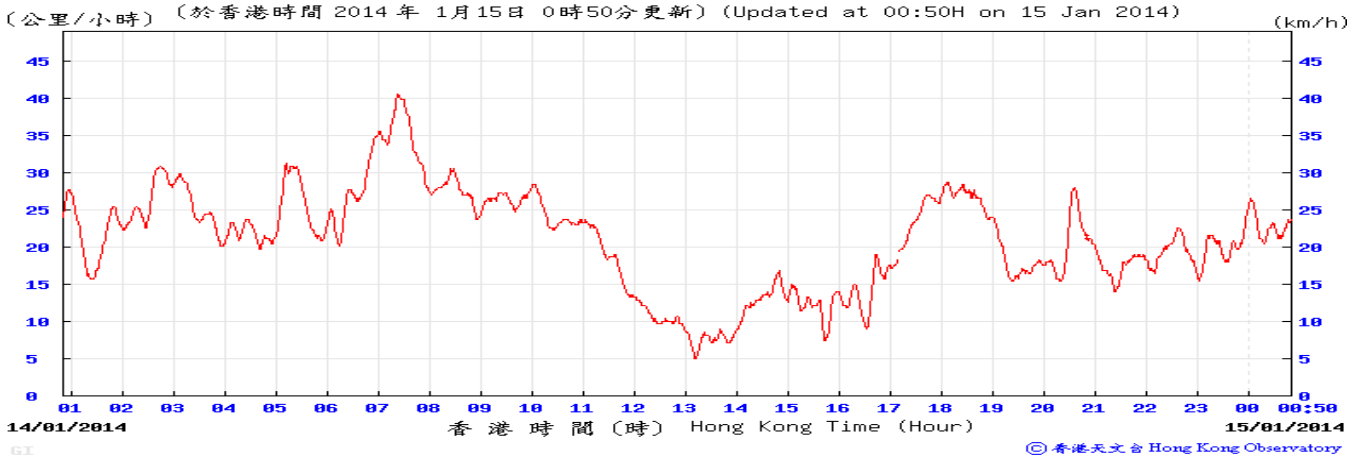

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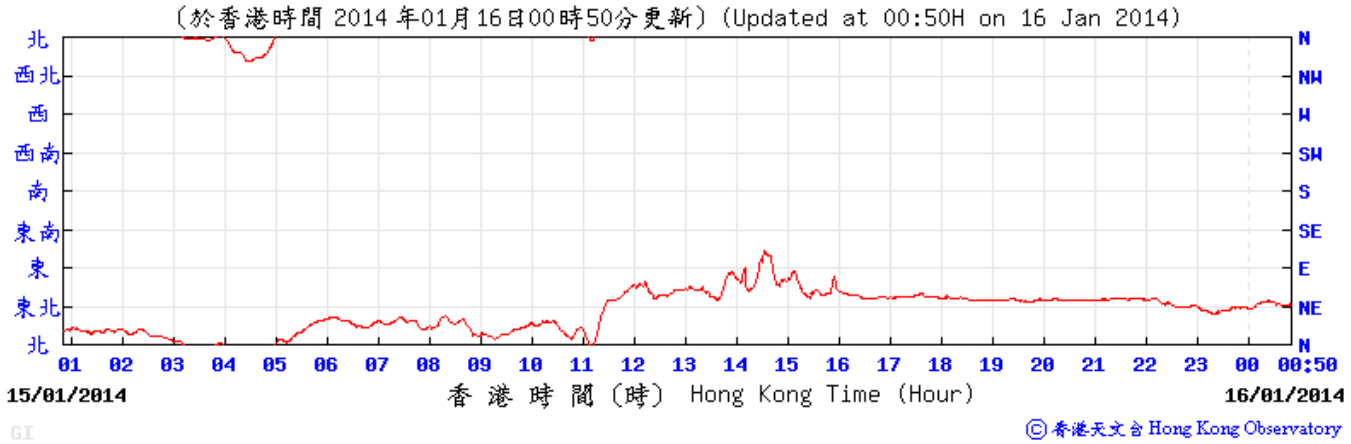

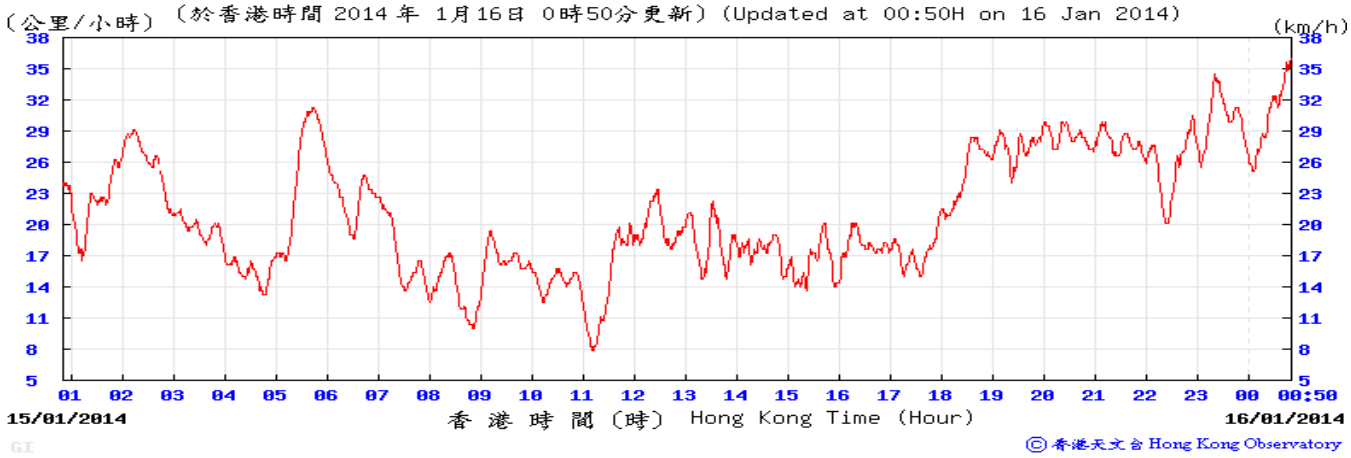

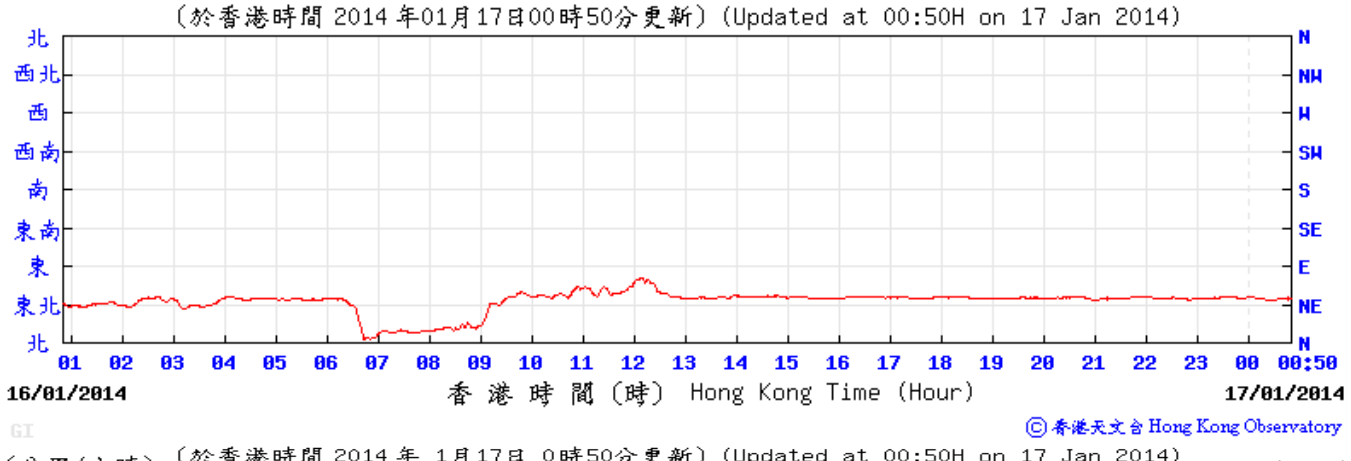

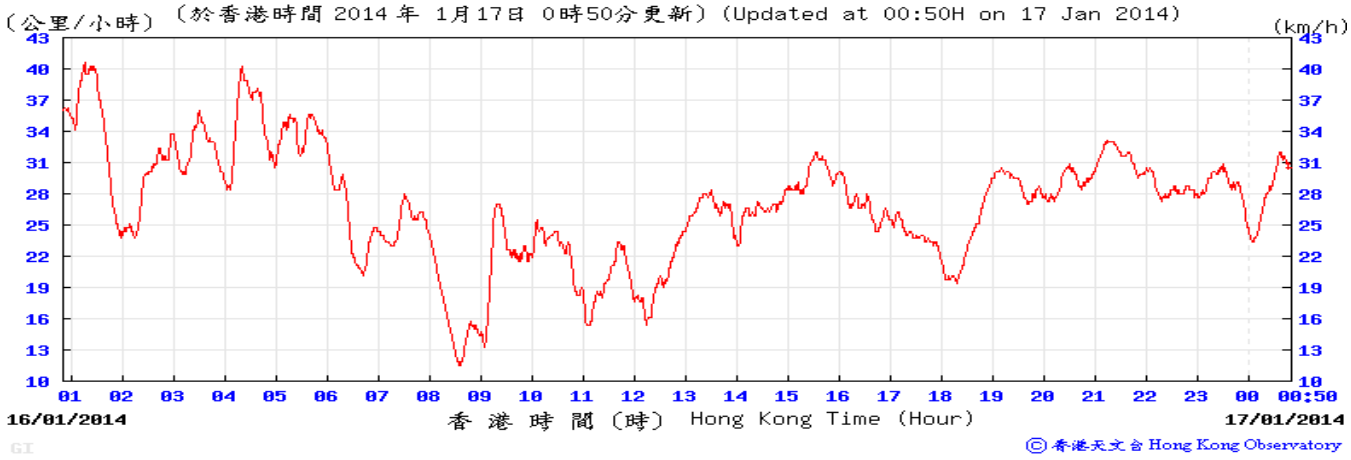

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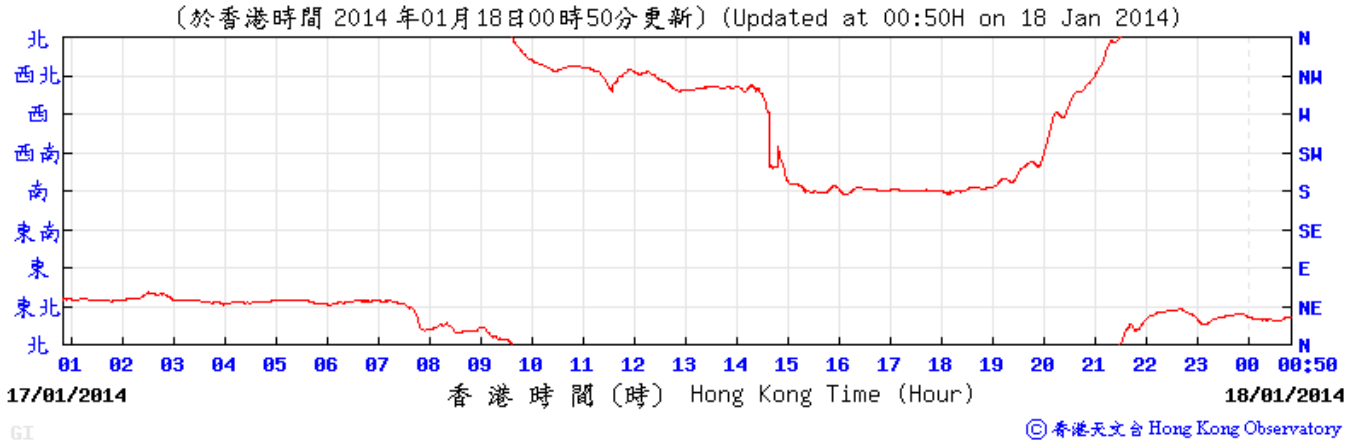

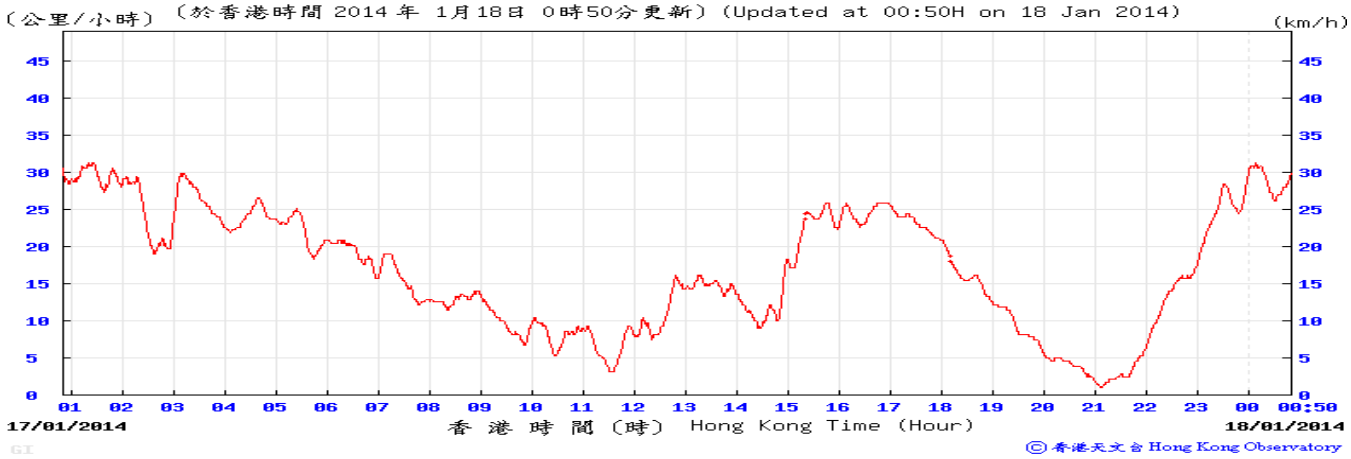

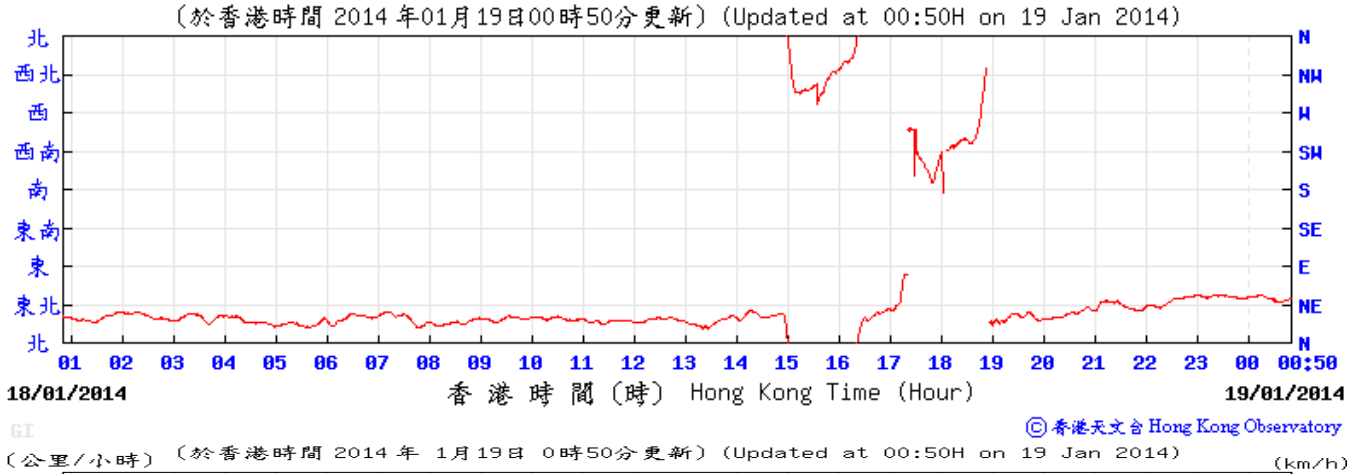

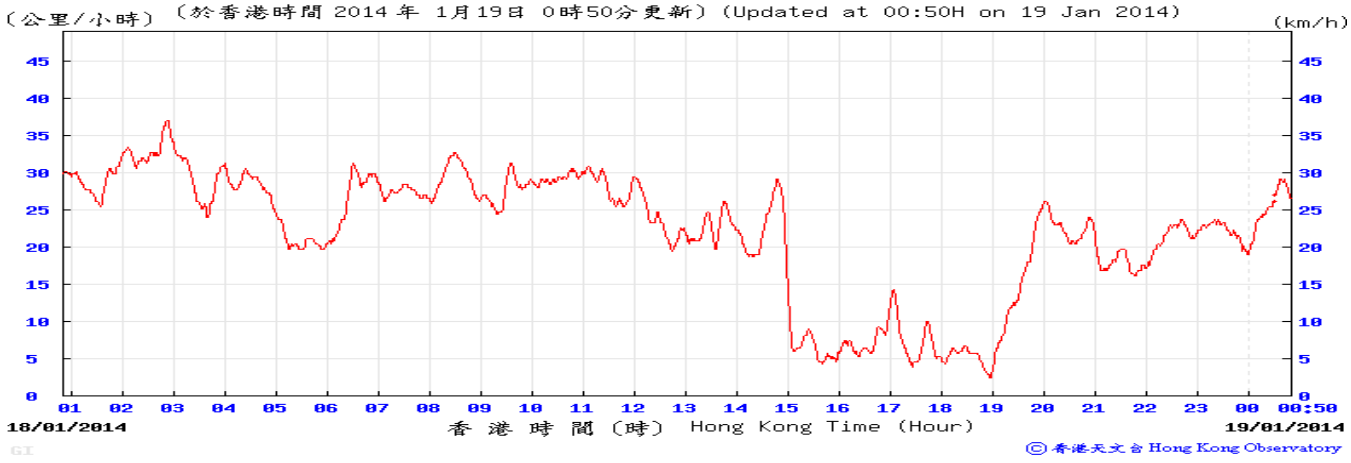

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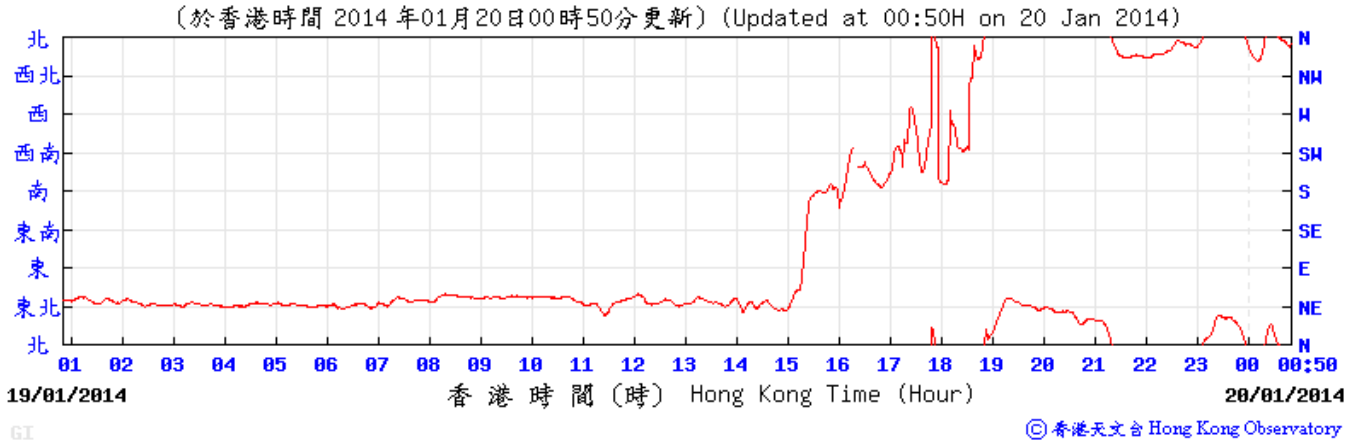

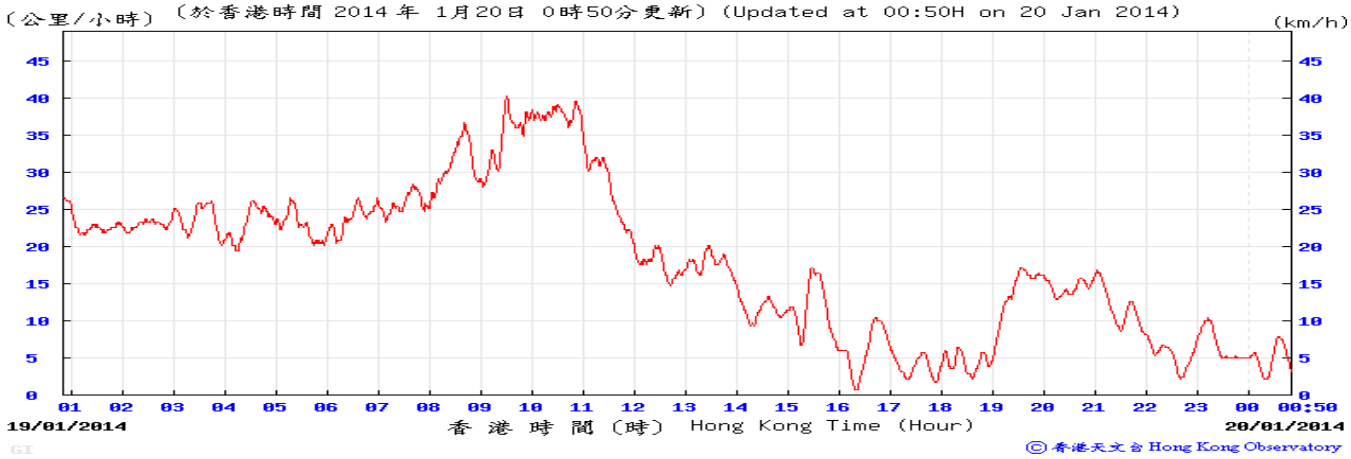

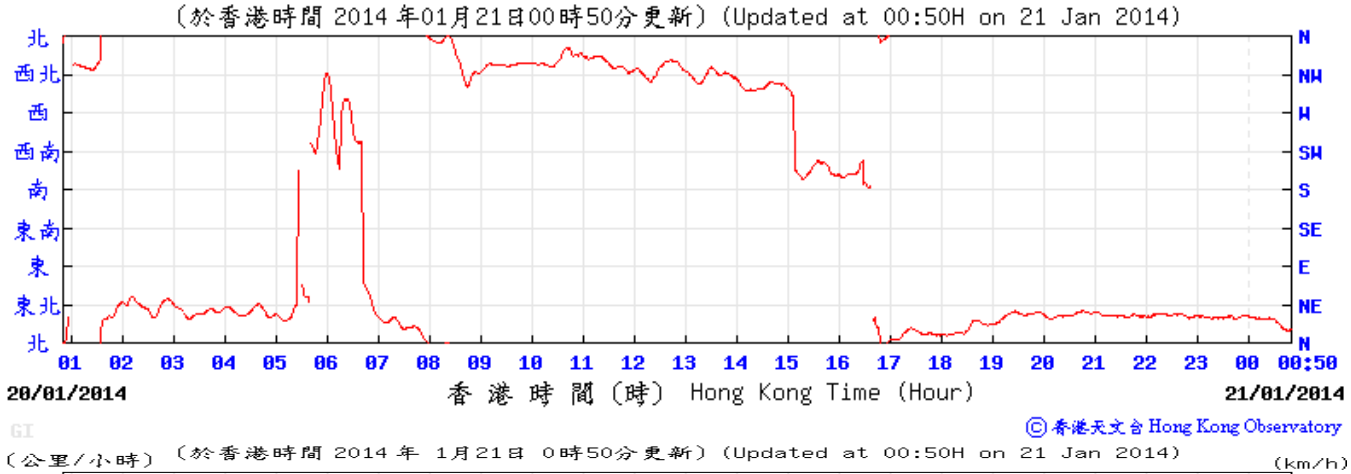

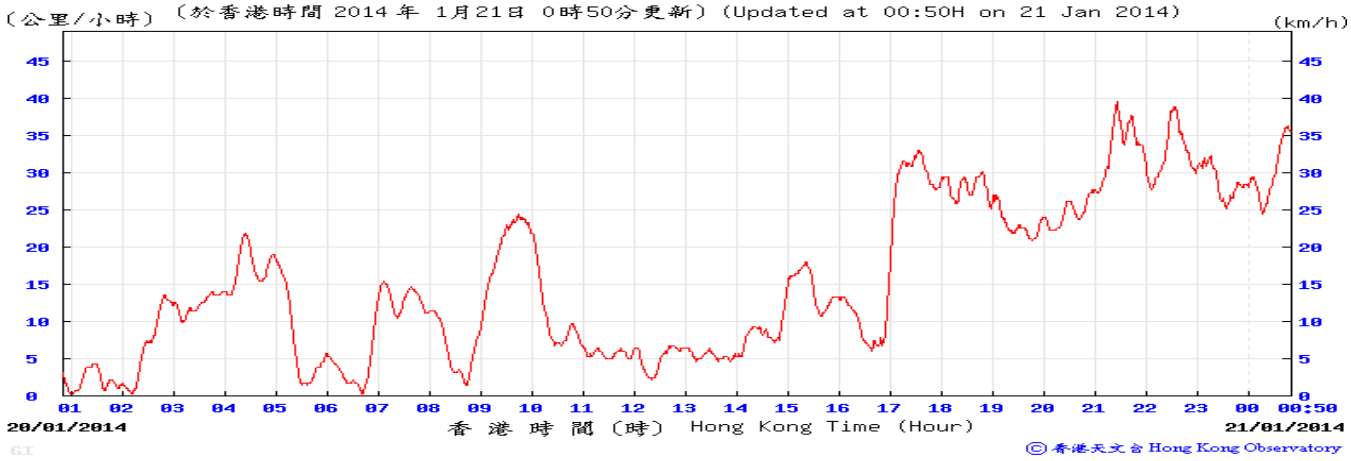

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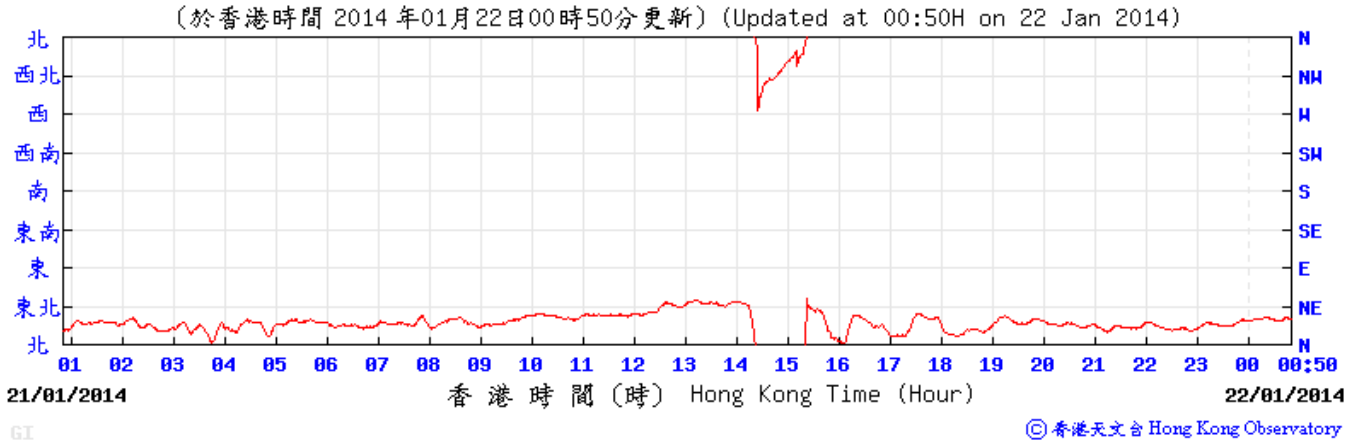

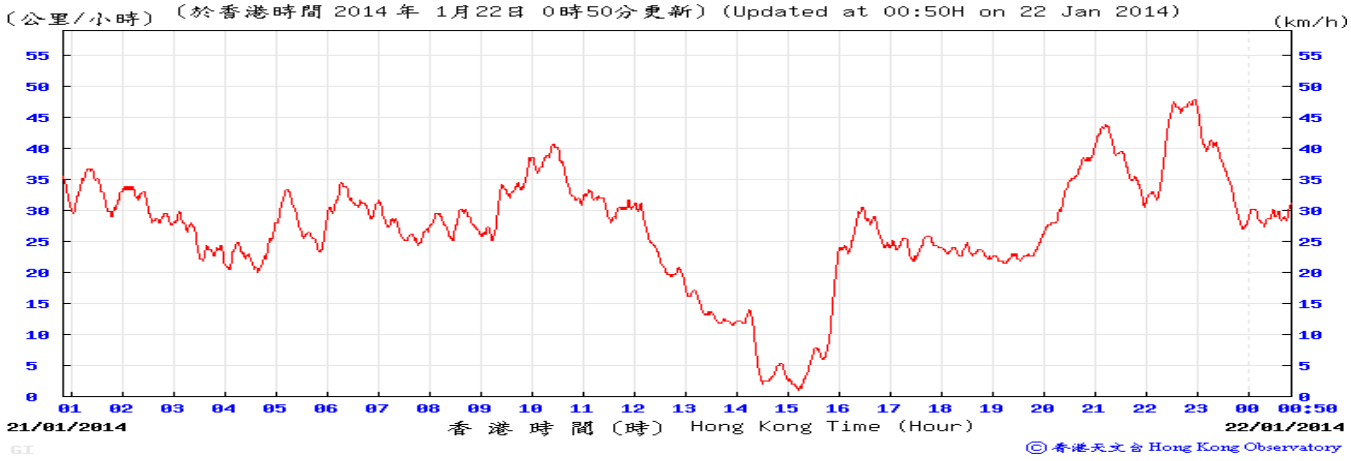

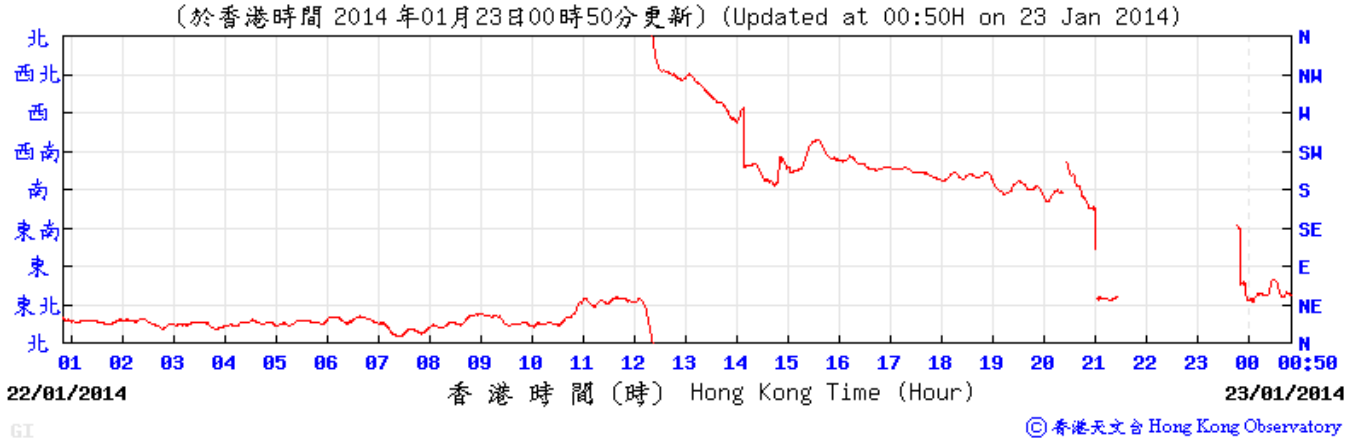

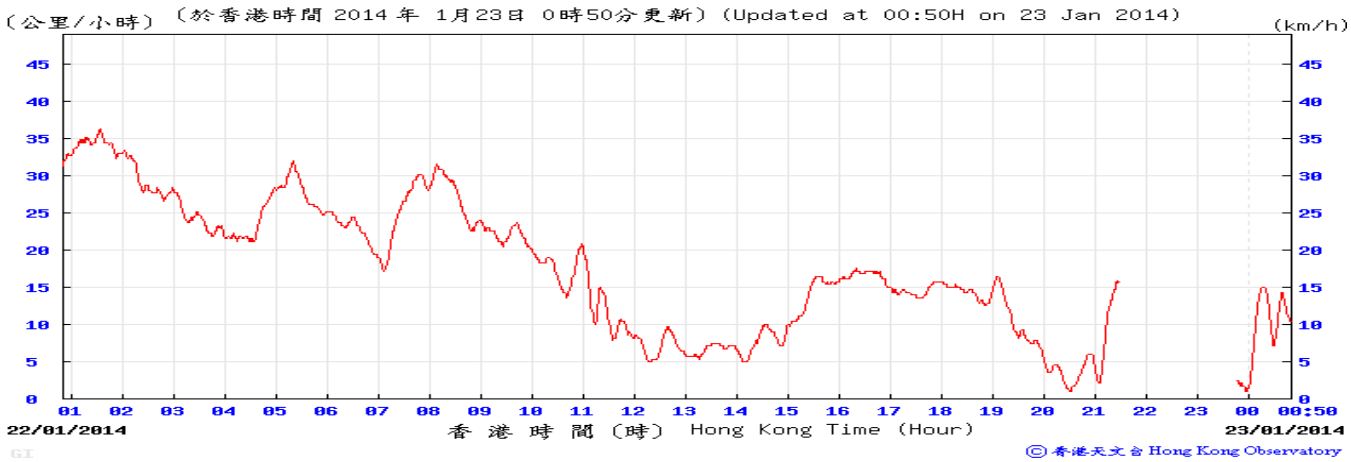

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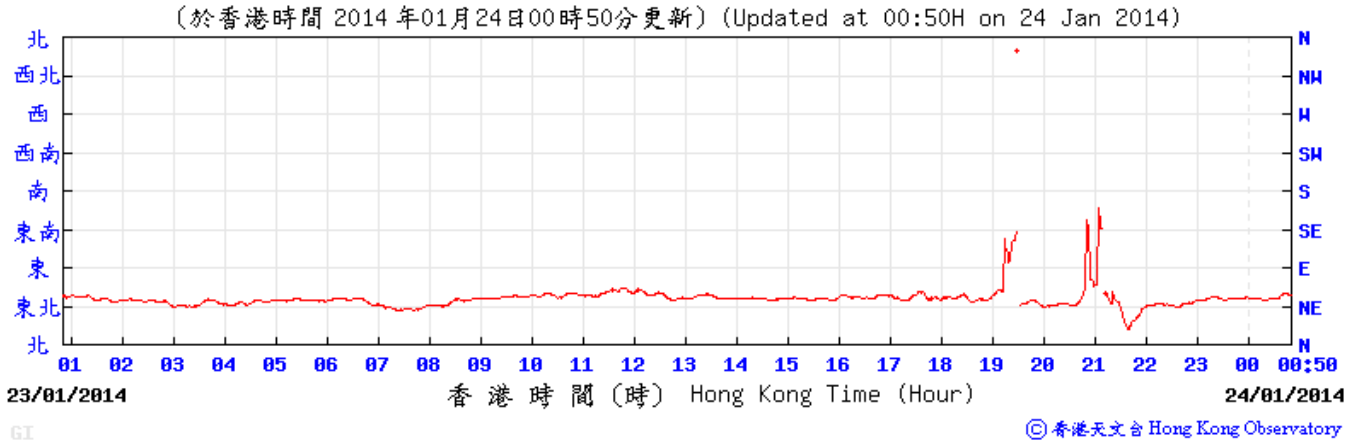

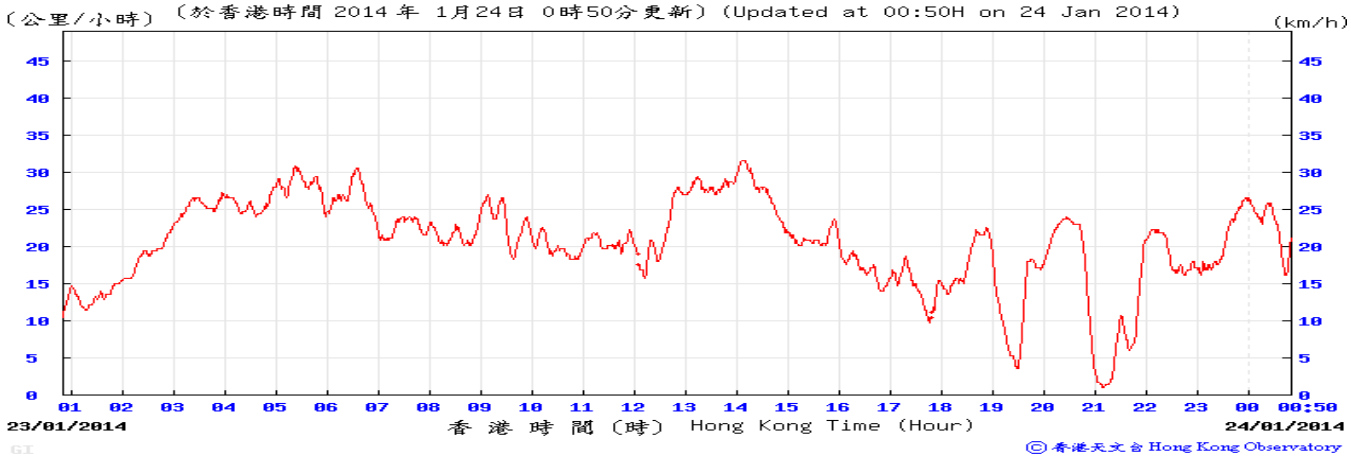

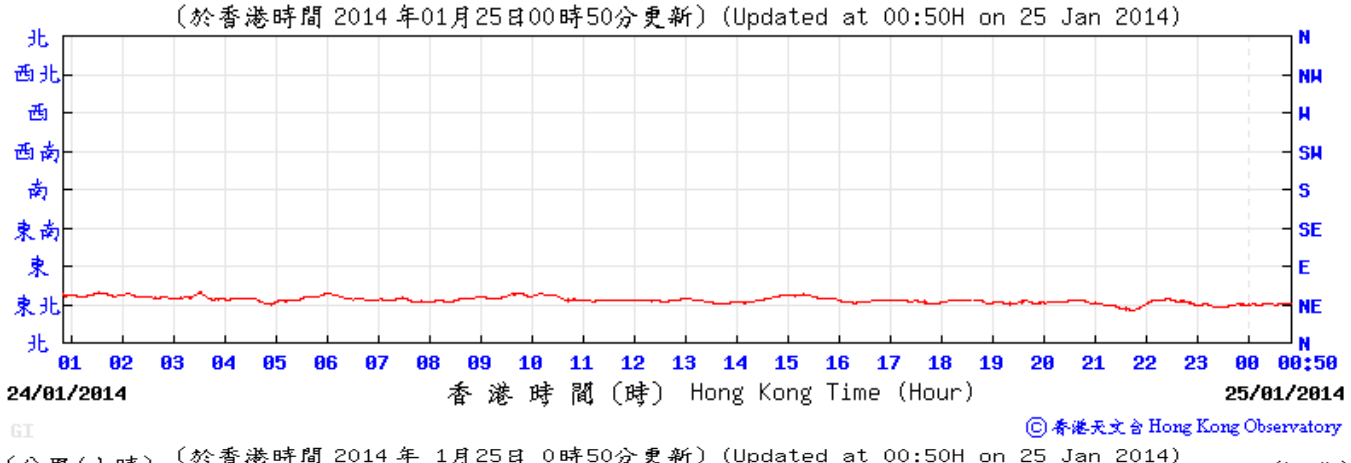

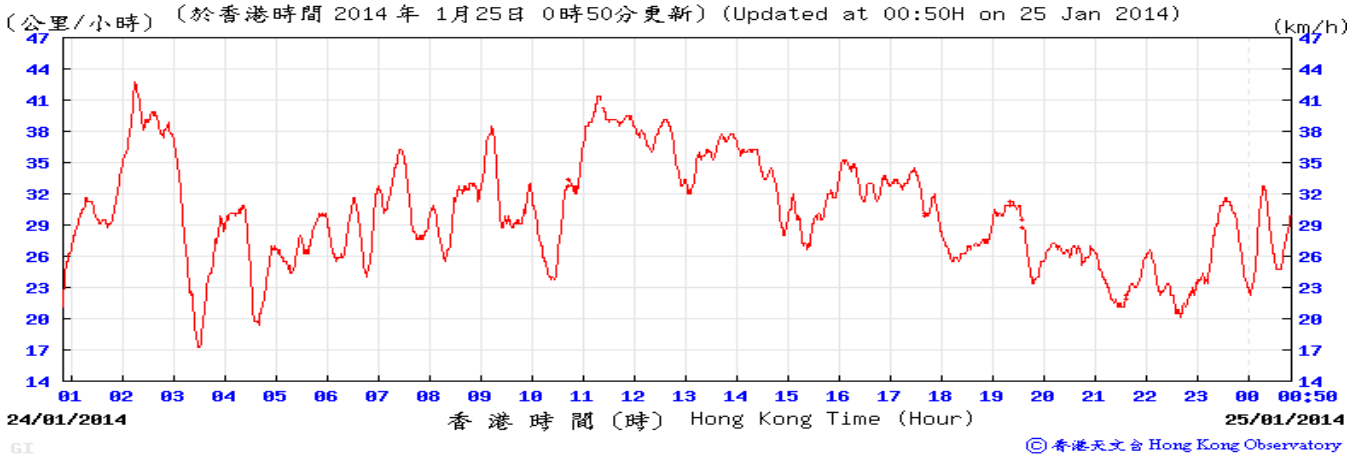

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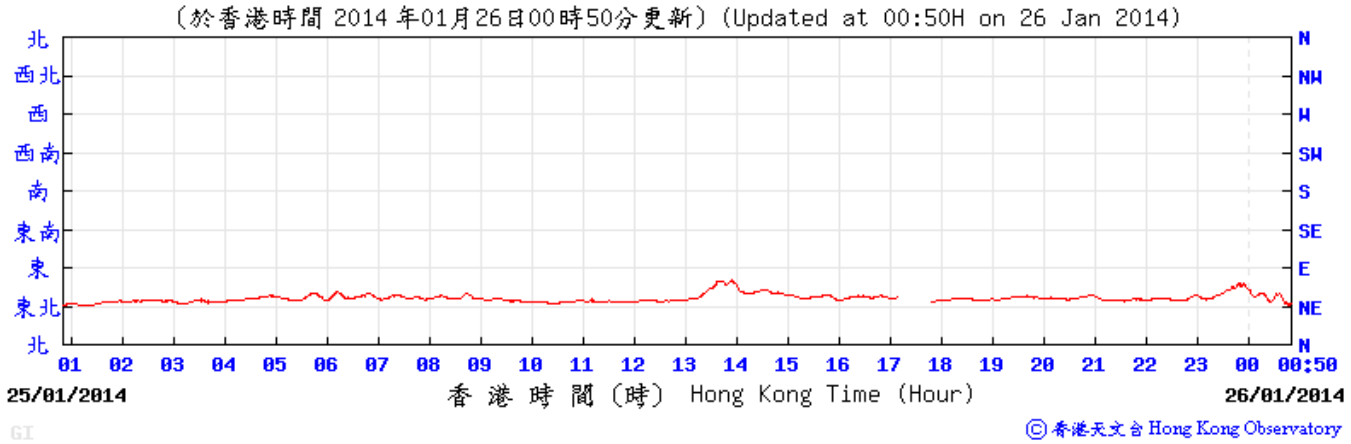

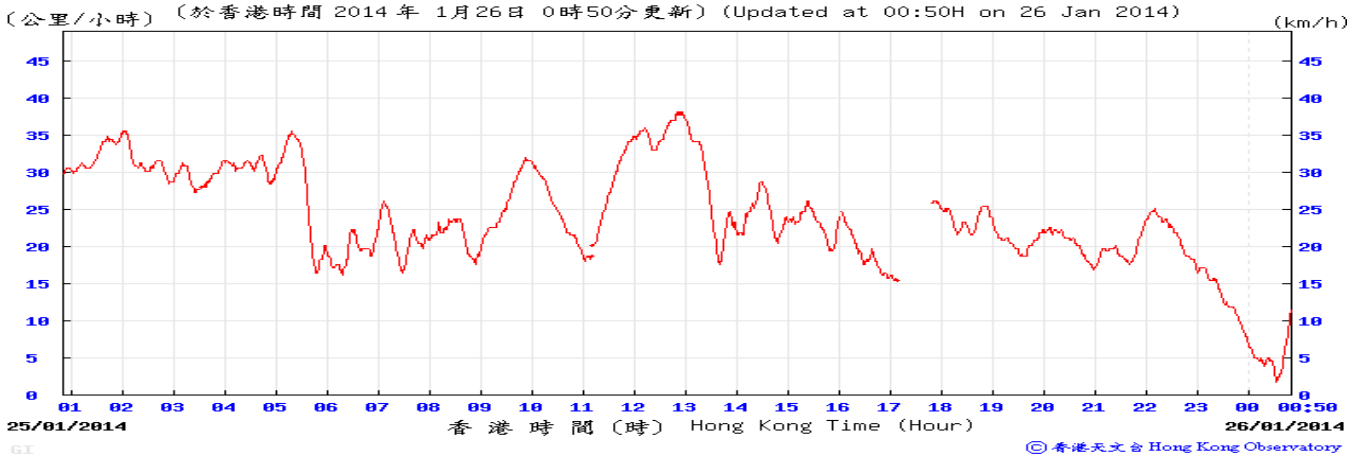

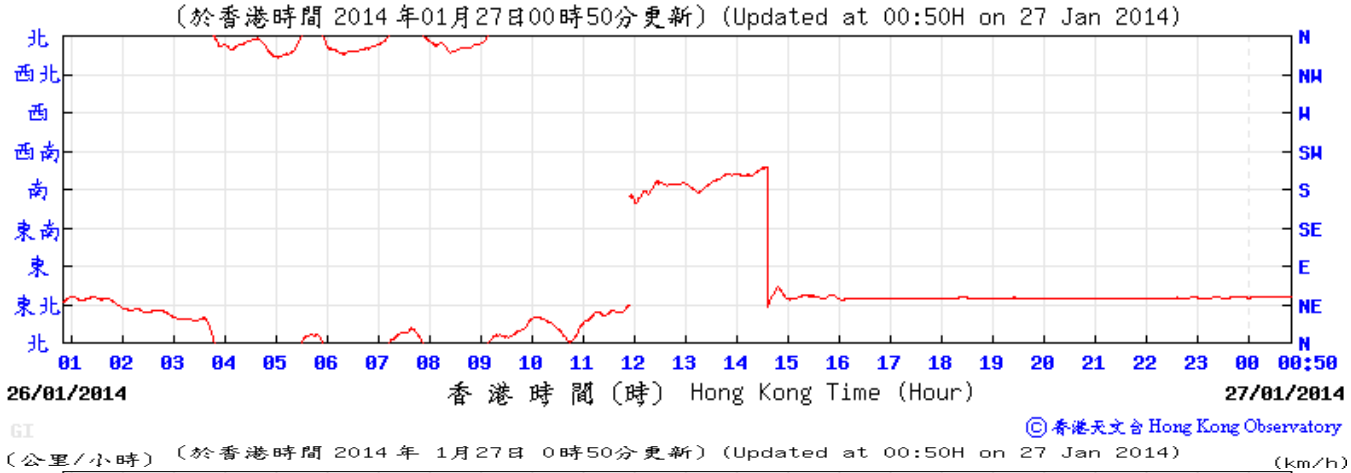

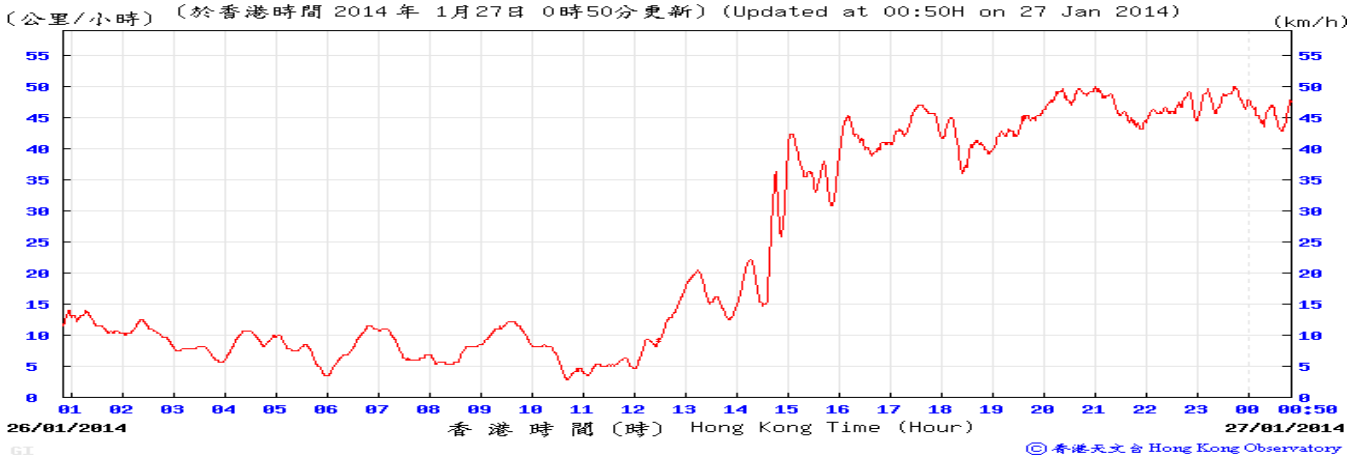

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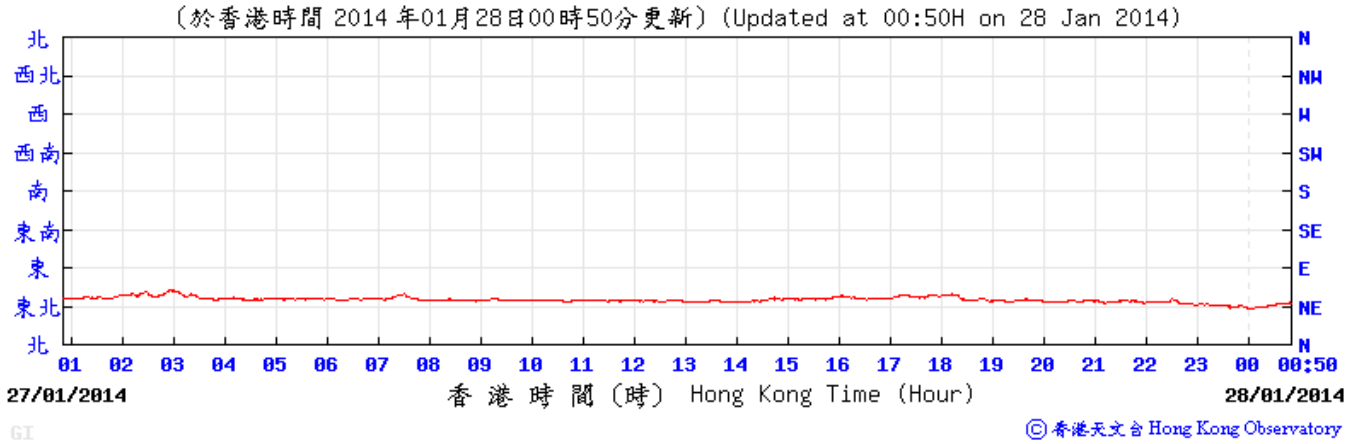

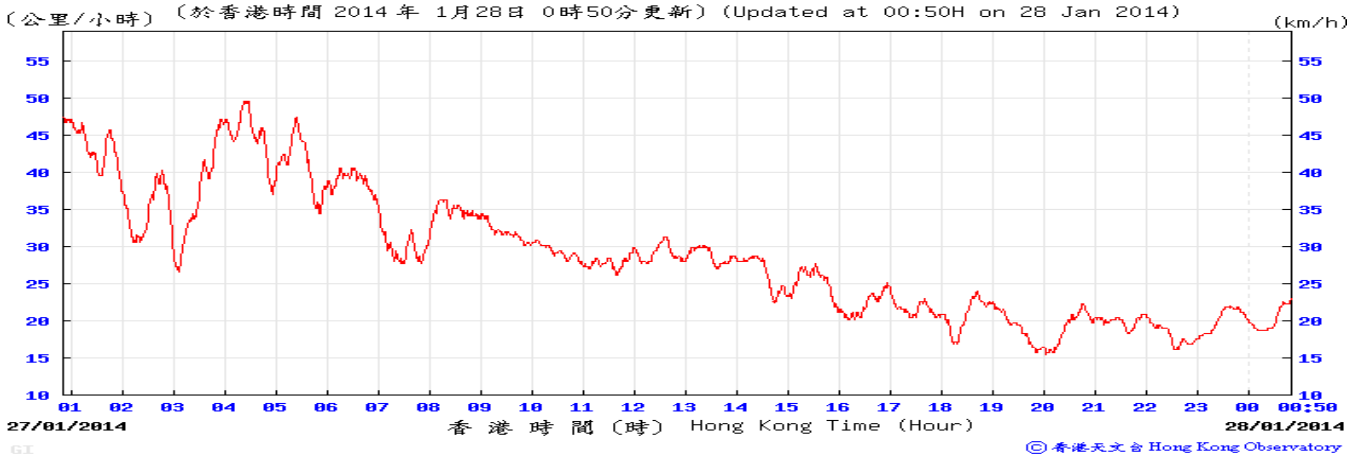

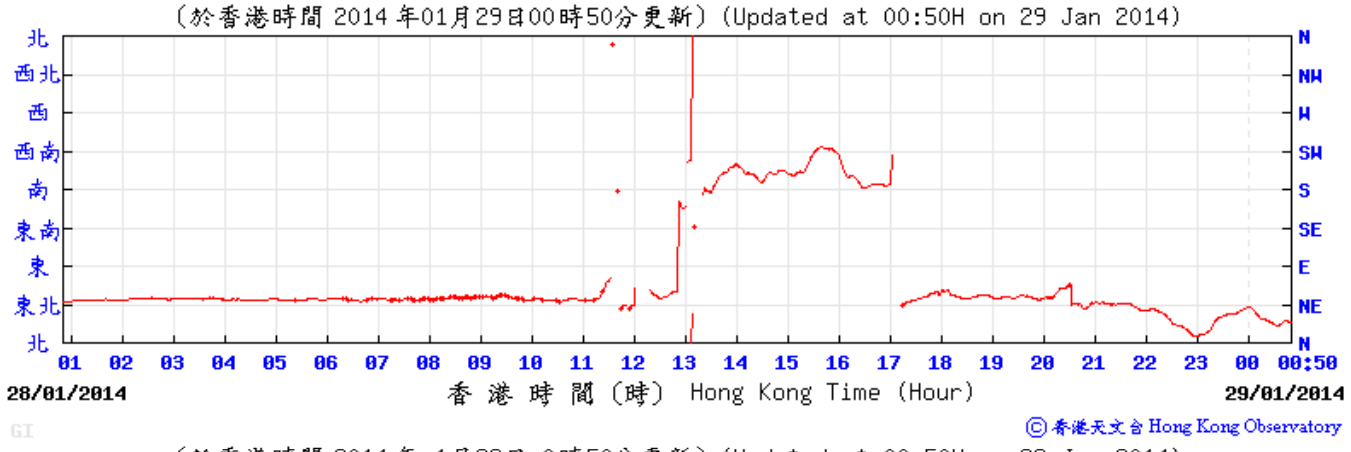

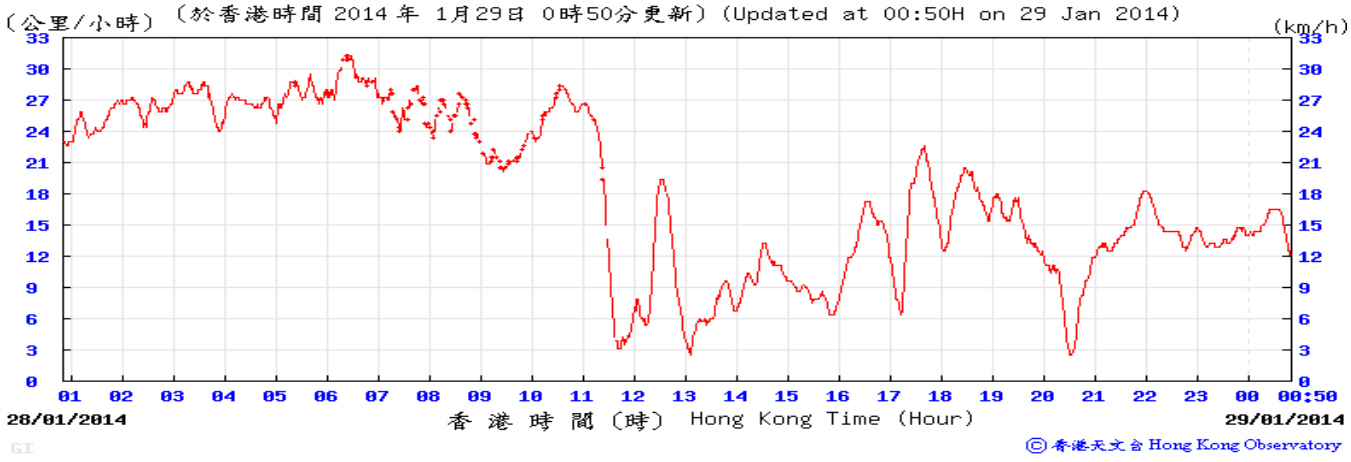

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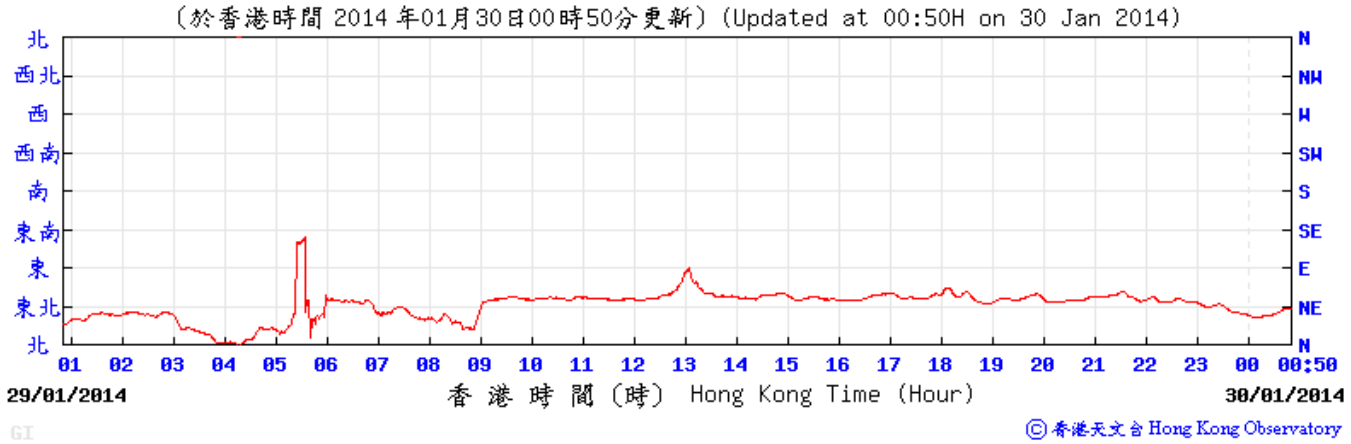

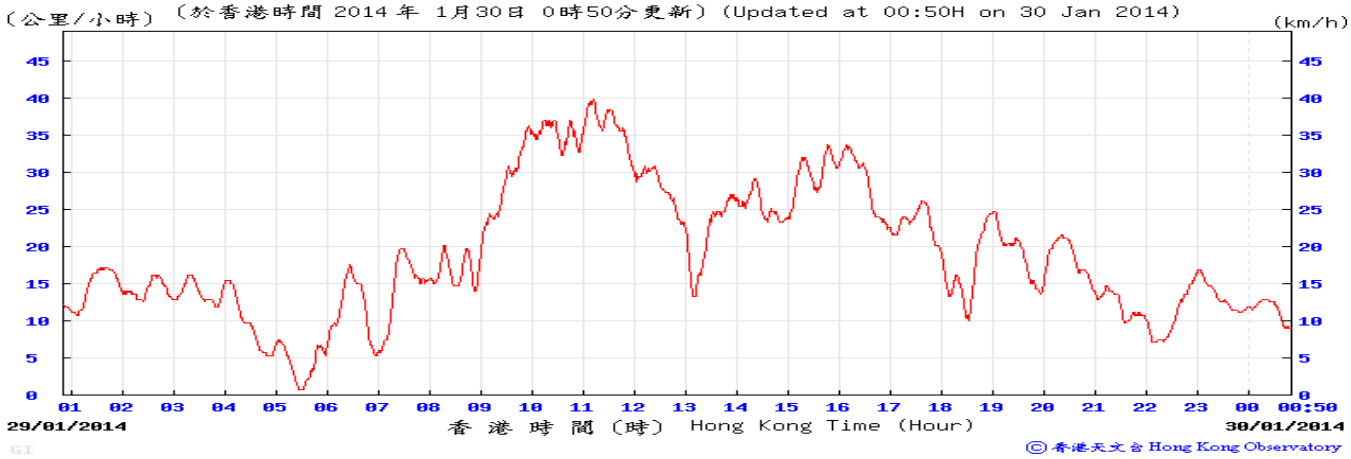

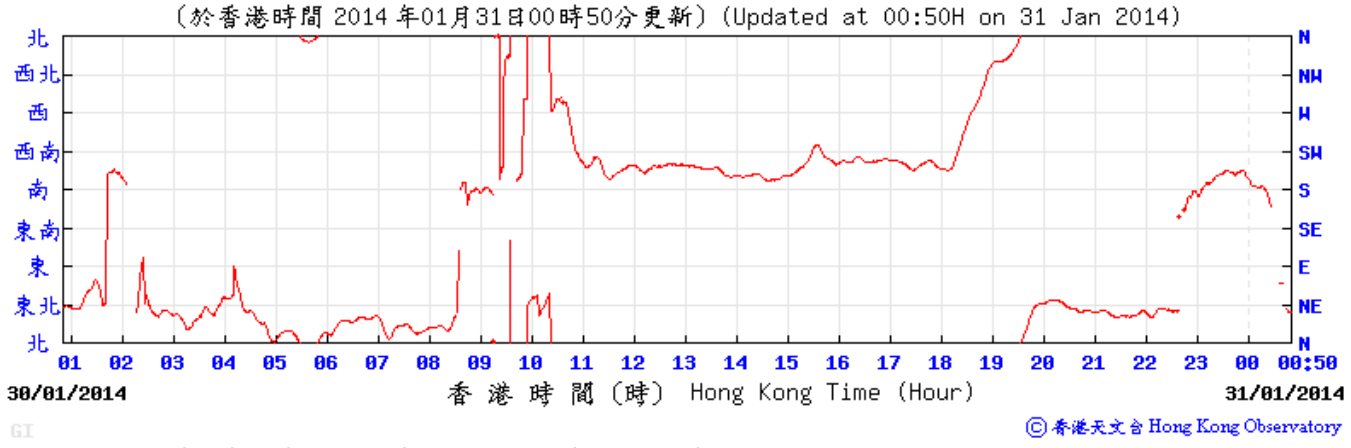

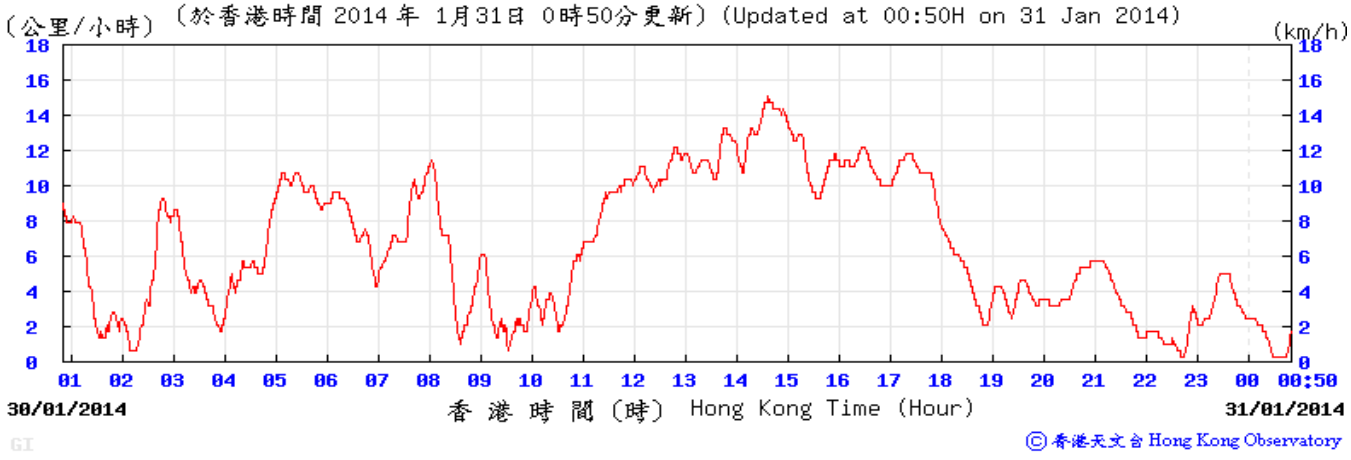

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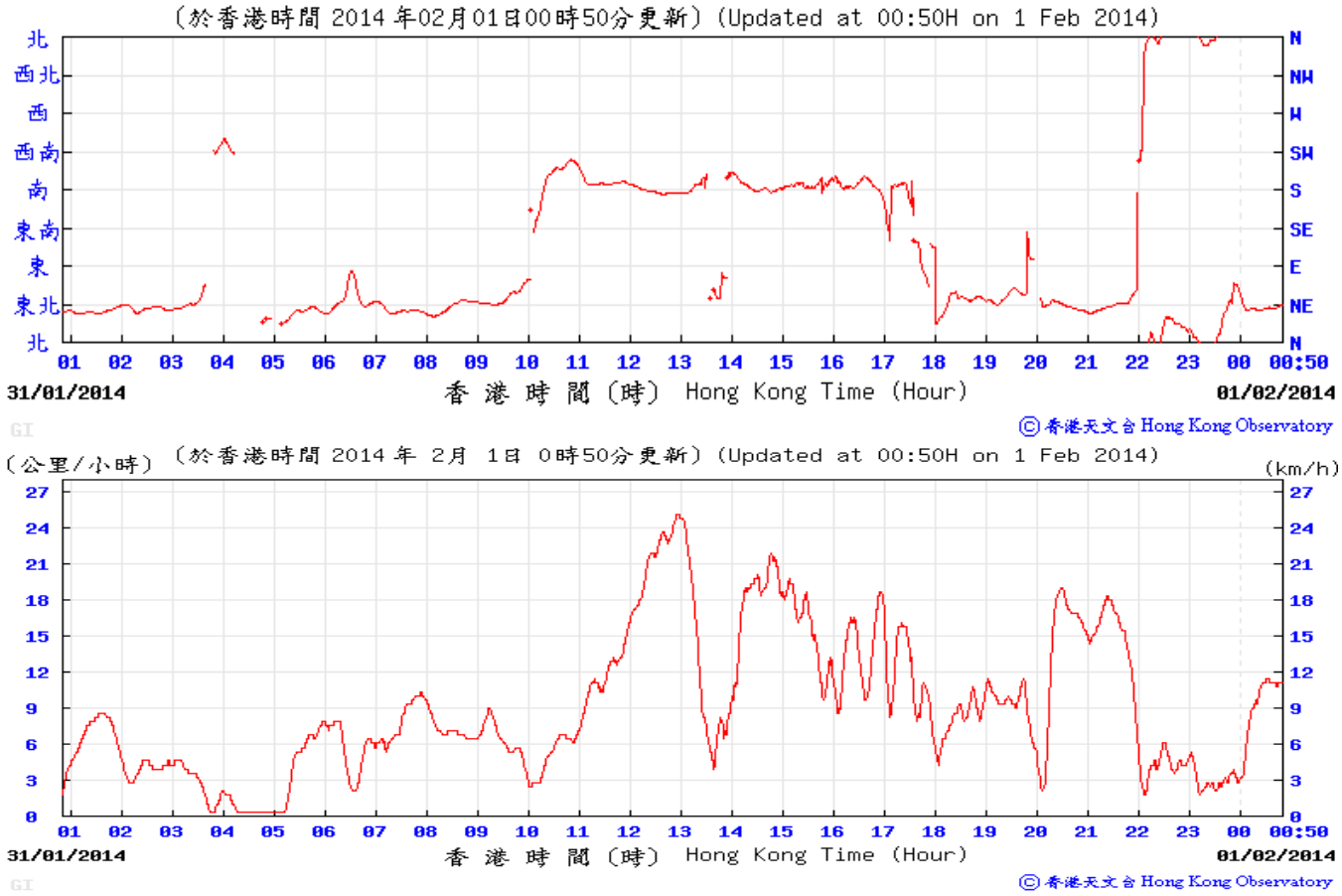

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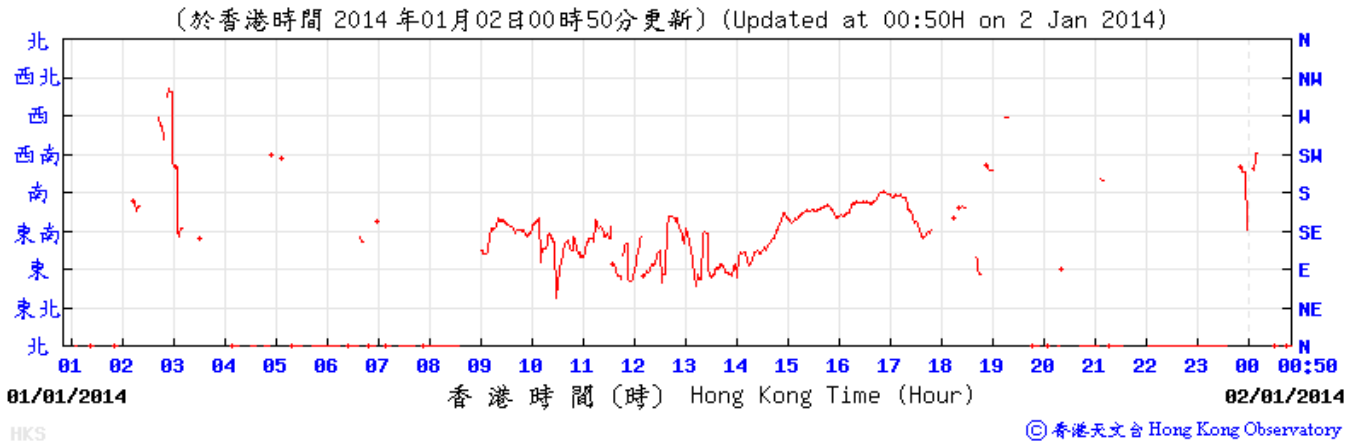
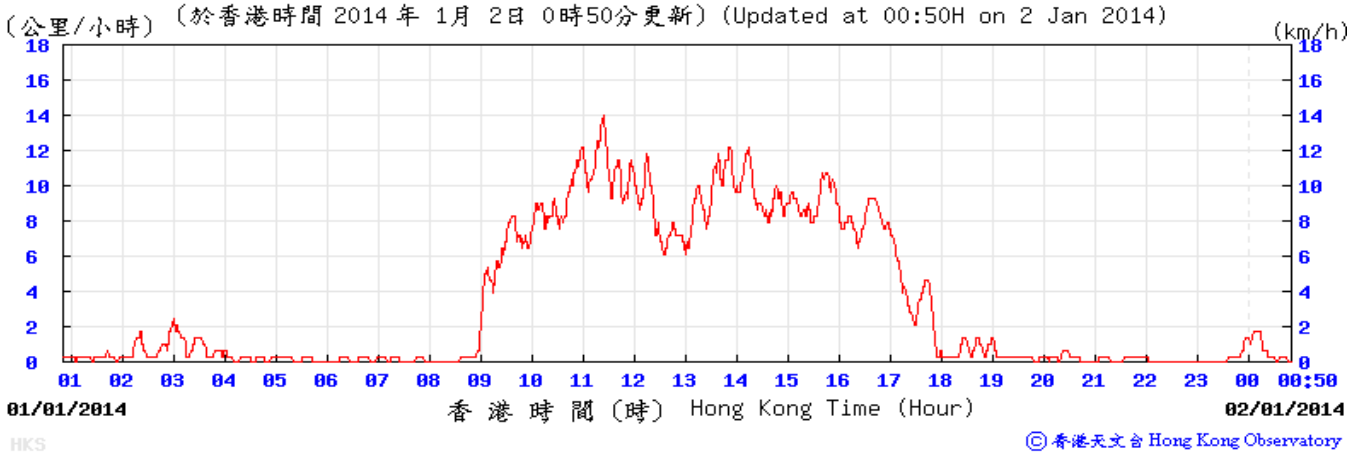
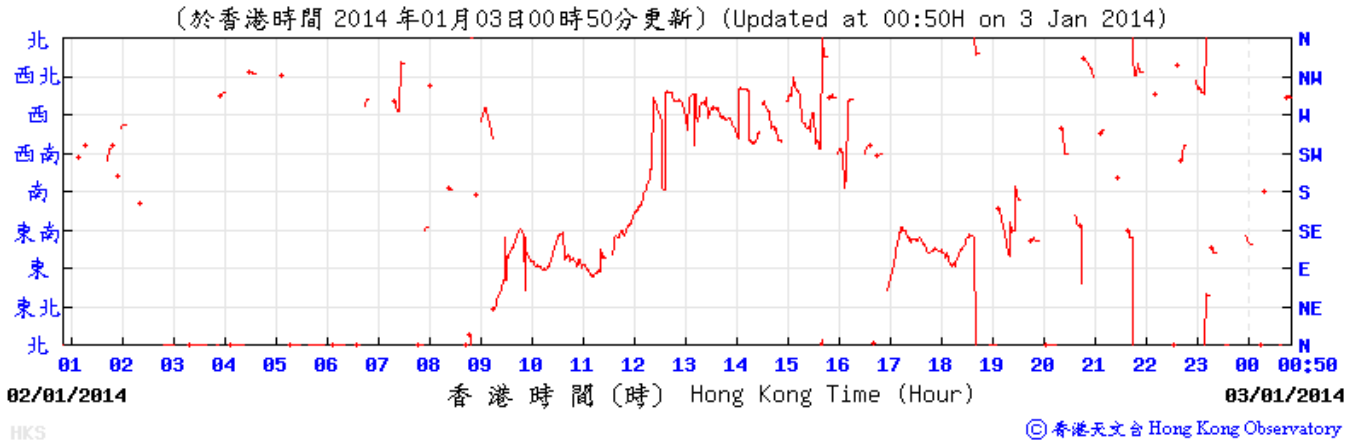
Weather Conditions at Wong Chuk Hang Weather Station during Monitoring Period







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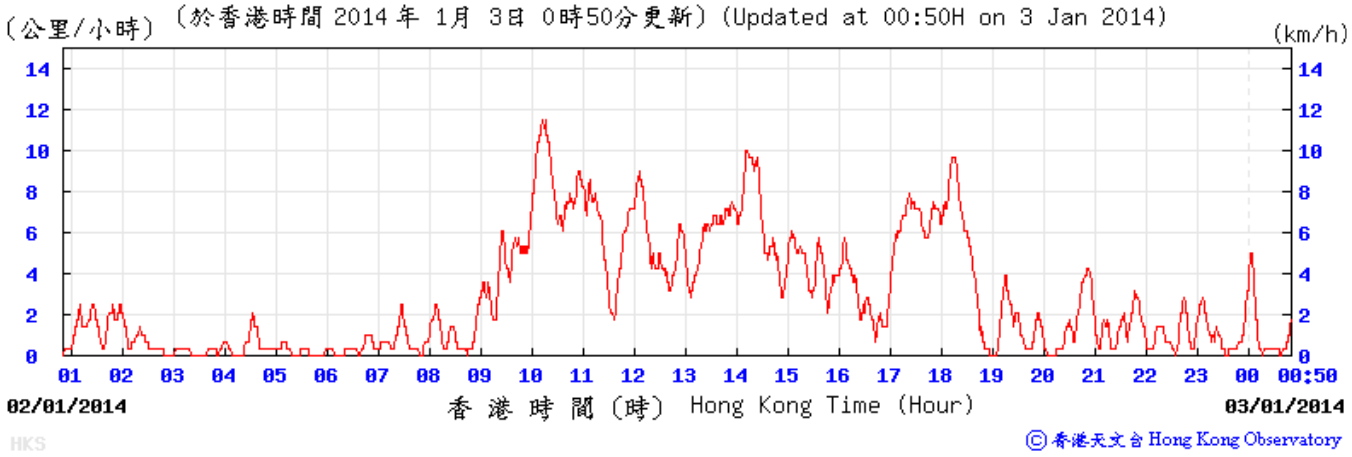

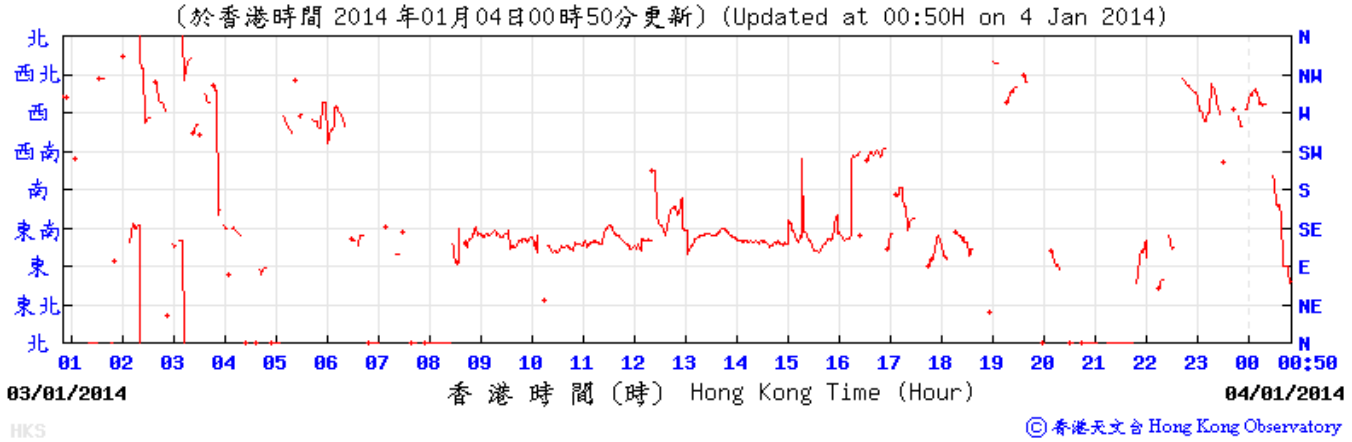

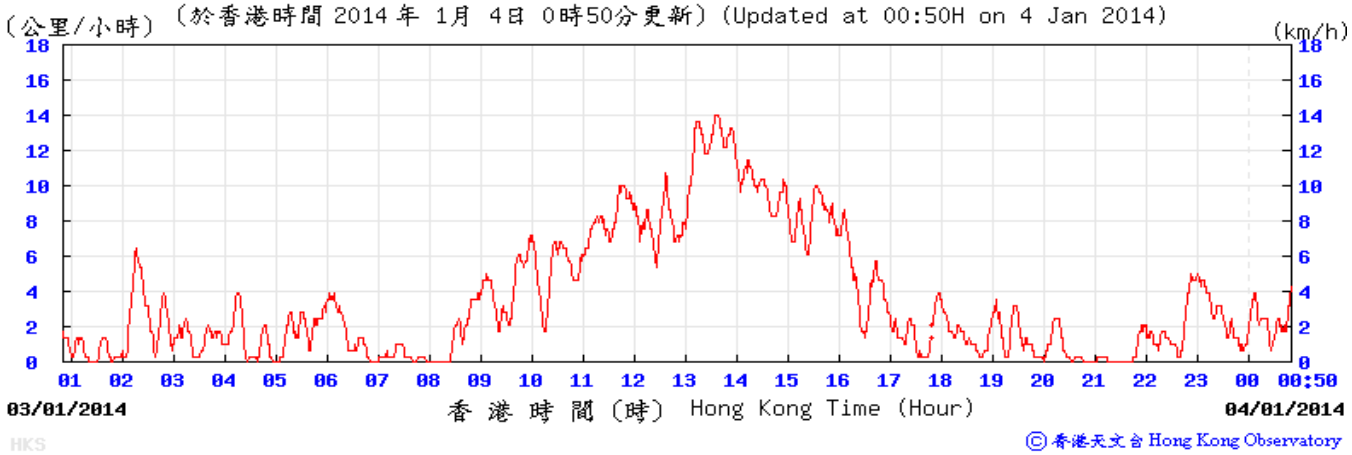

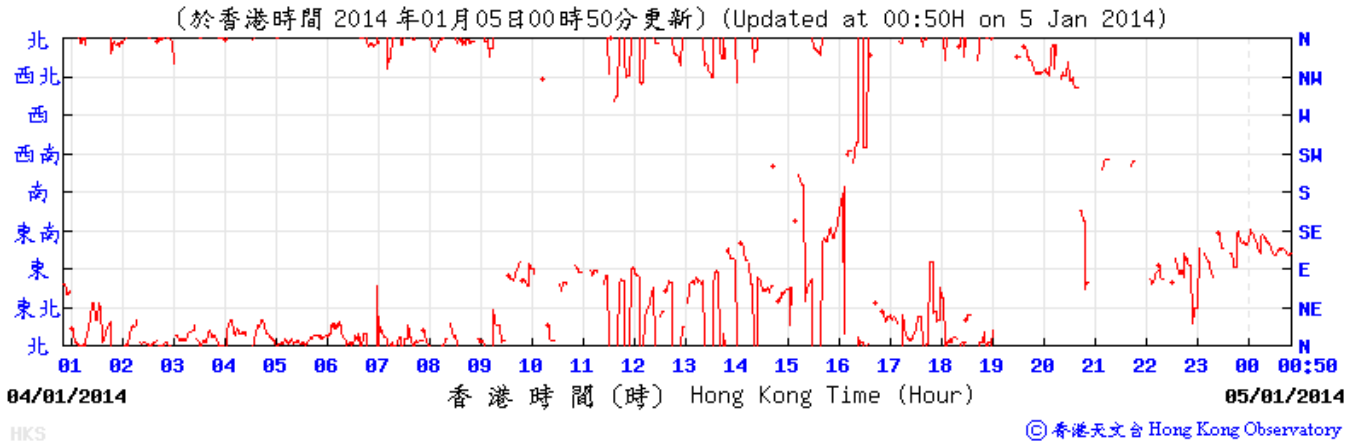

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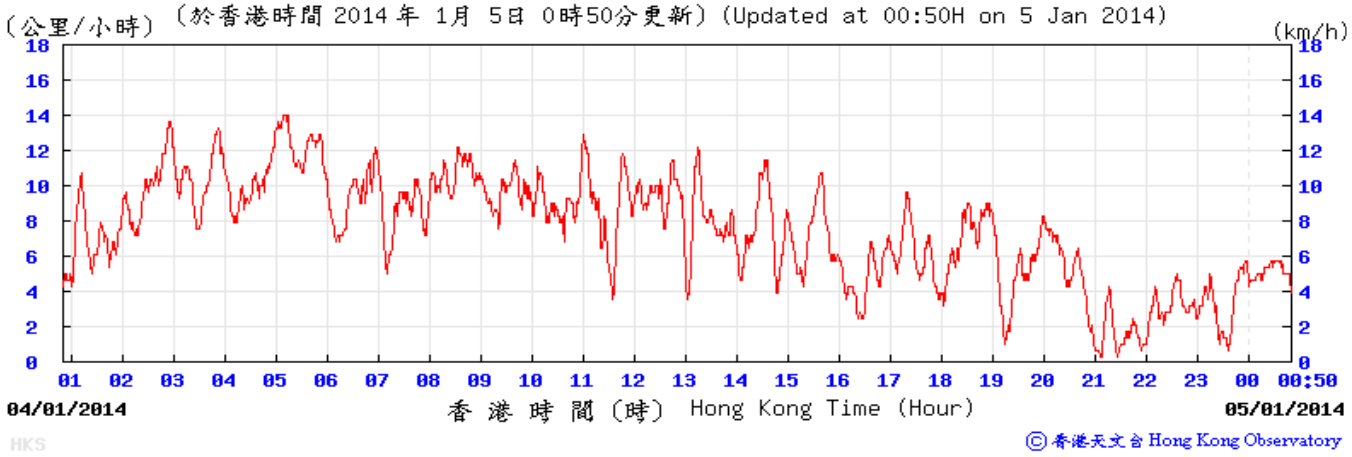

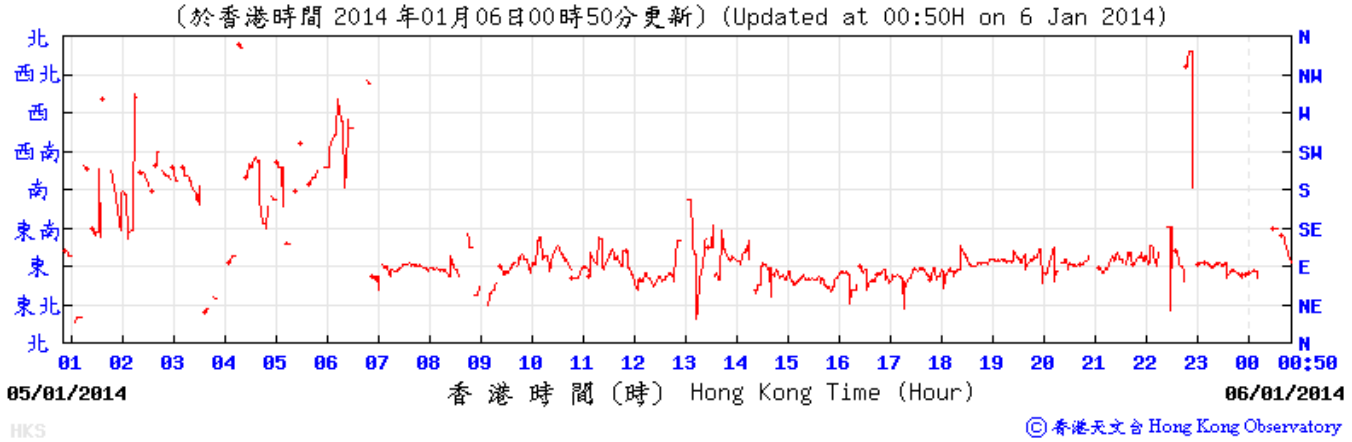

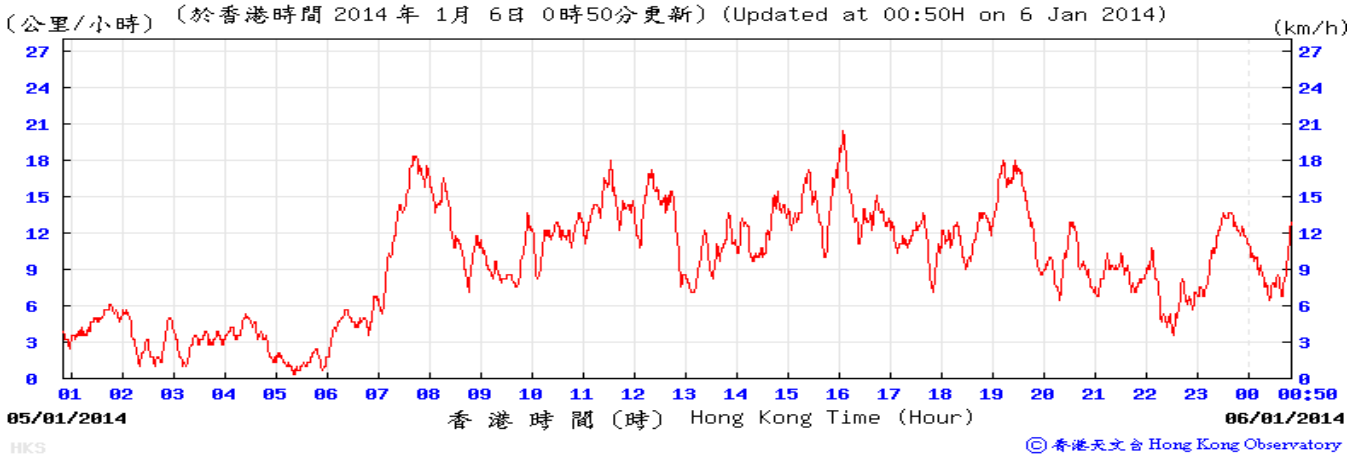

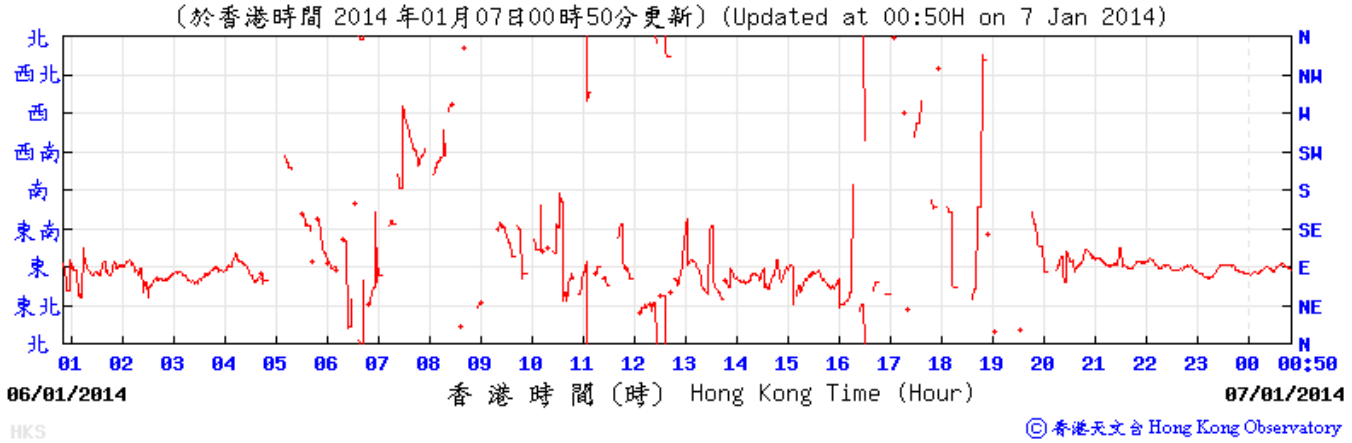

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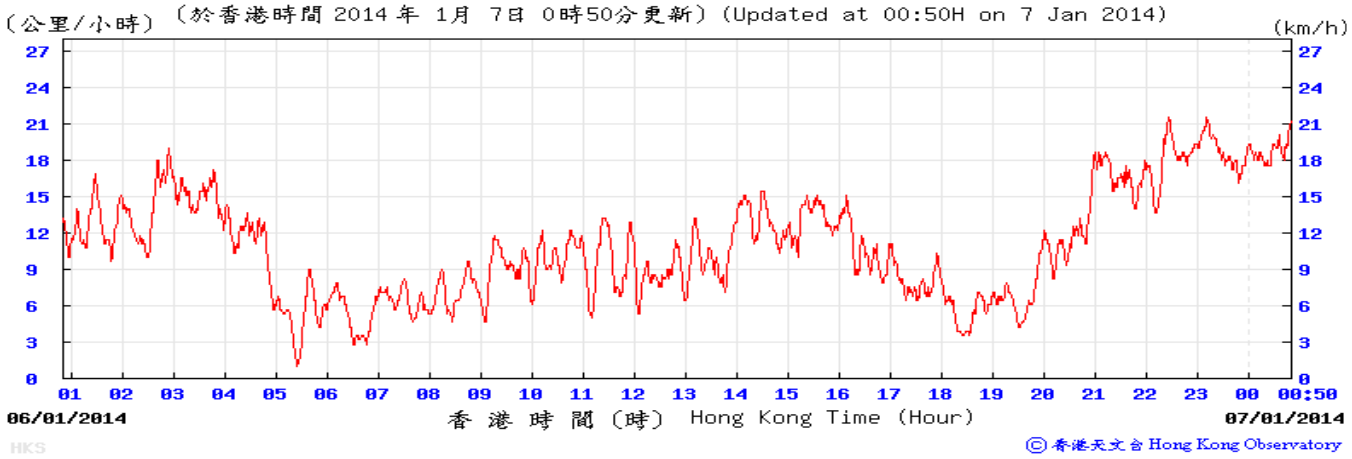
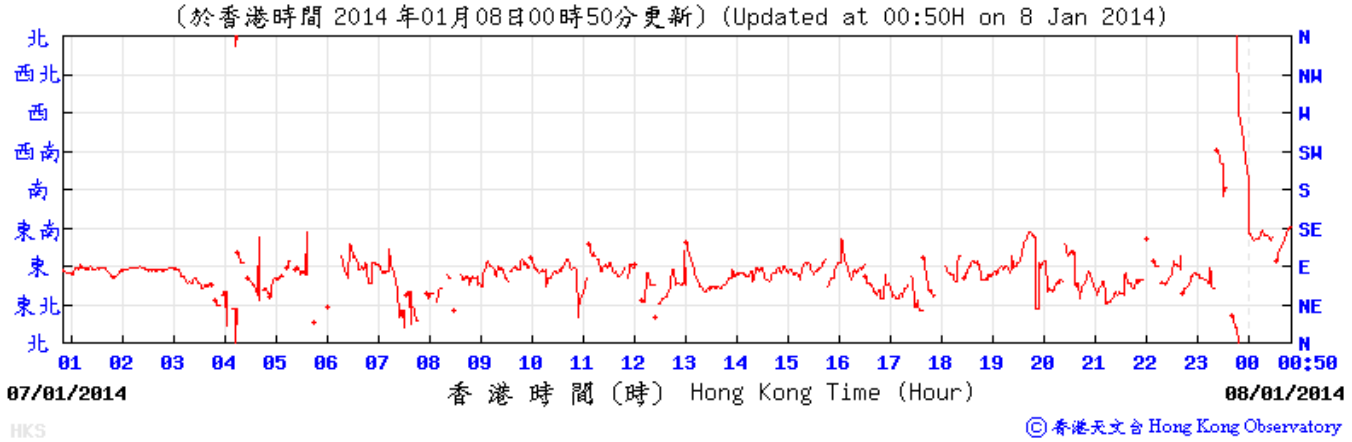
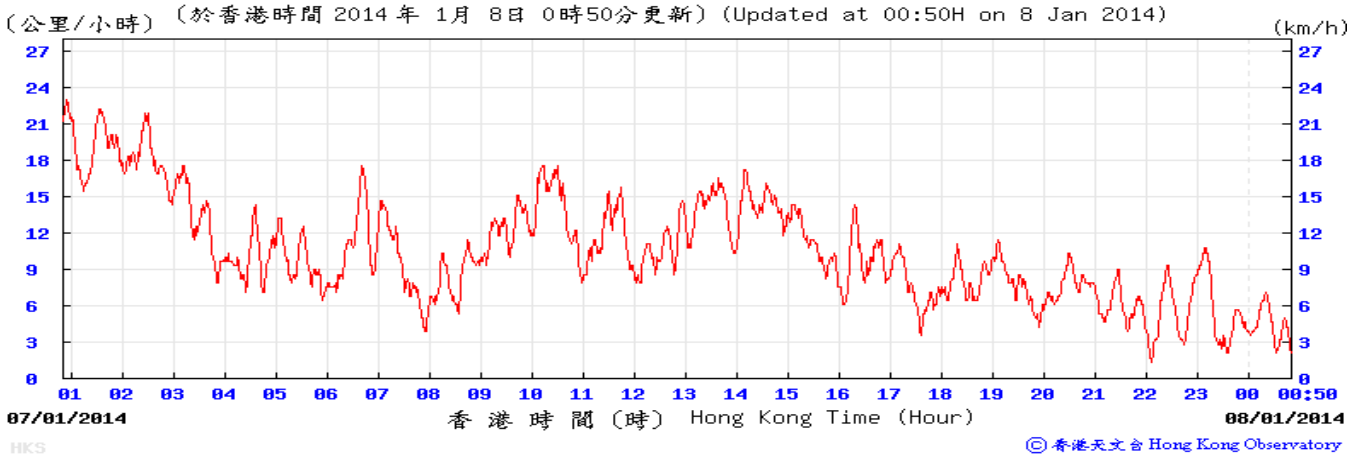
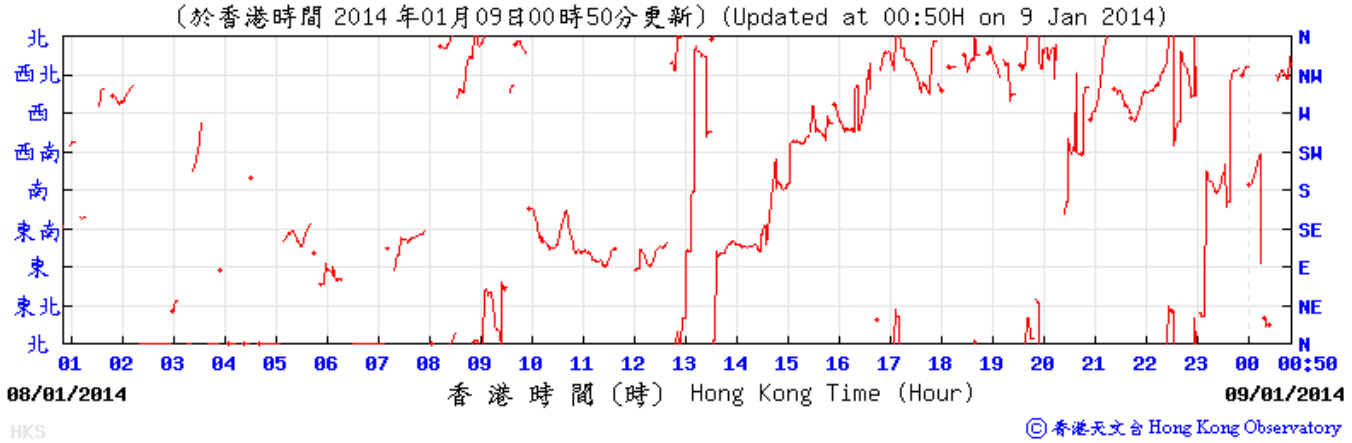


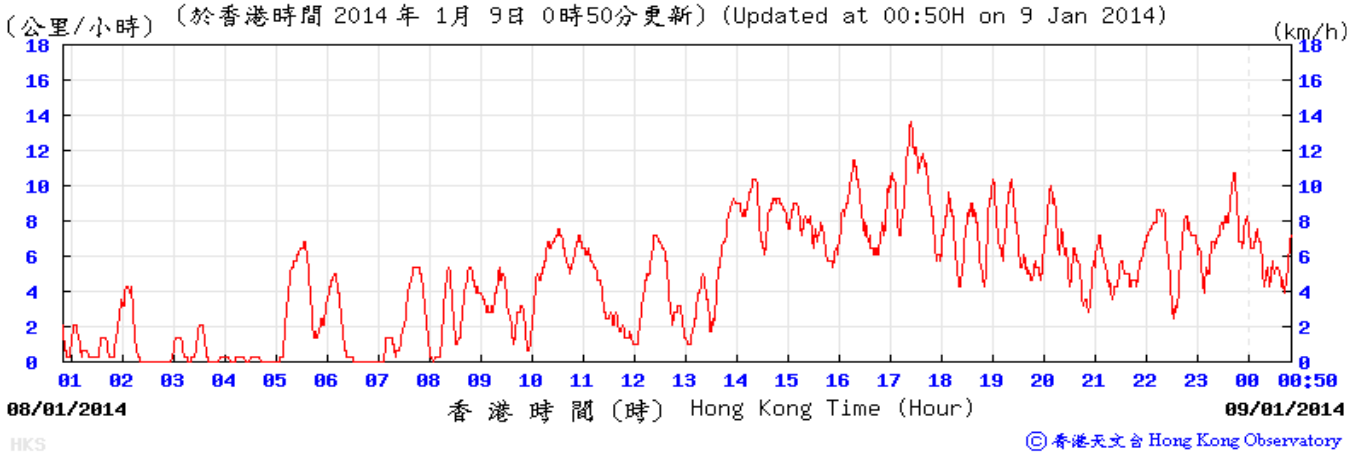


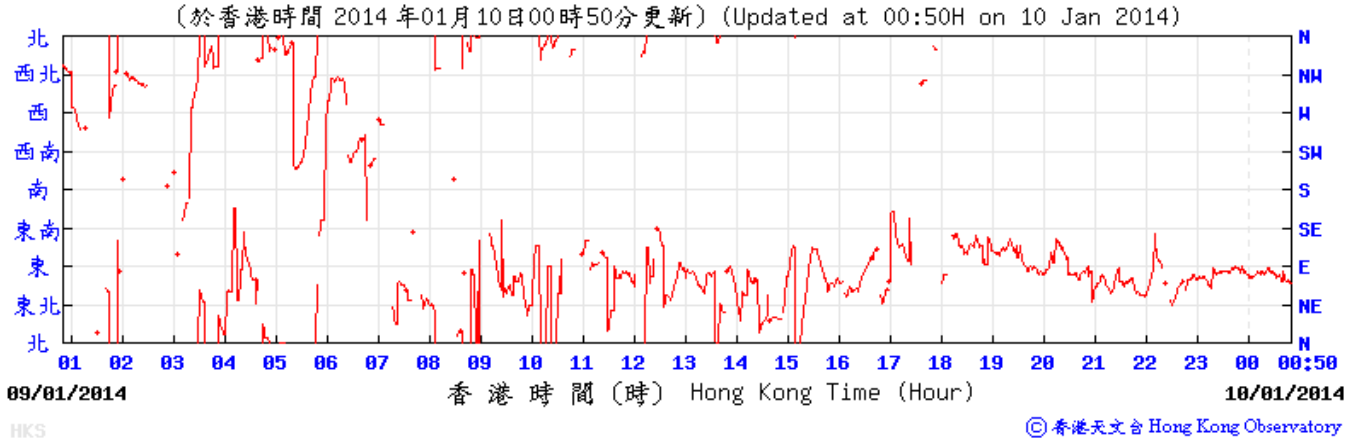


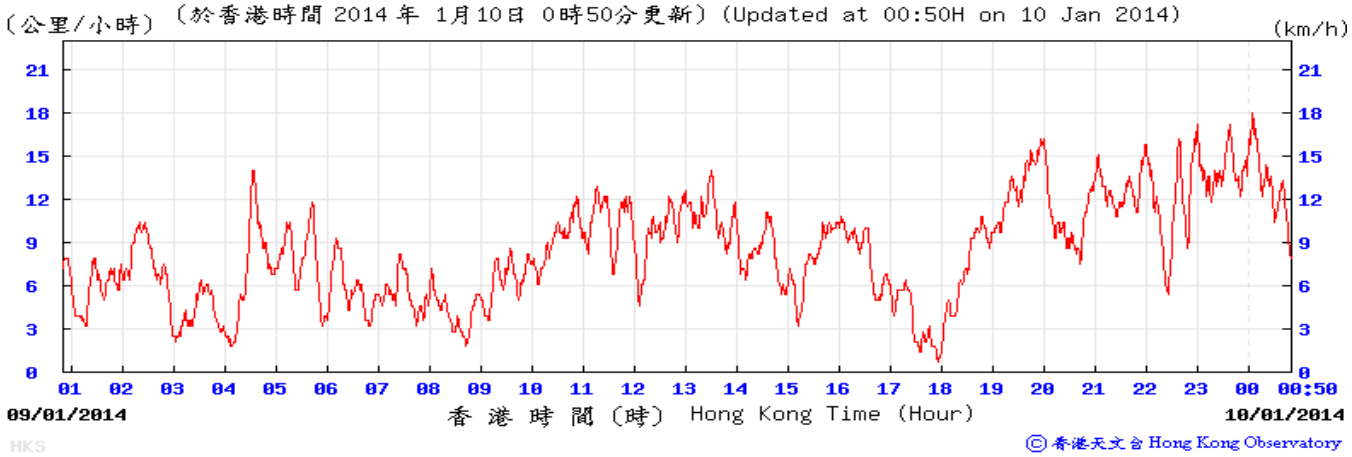


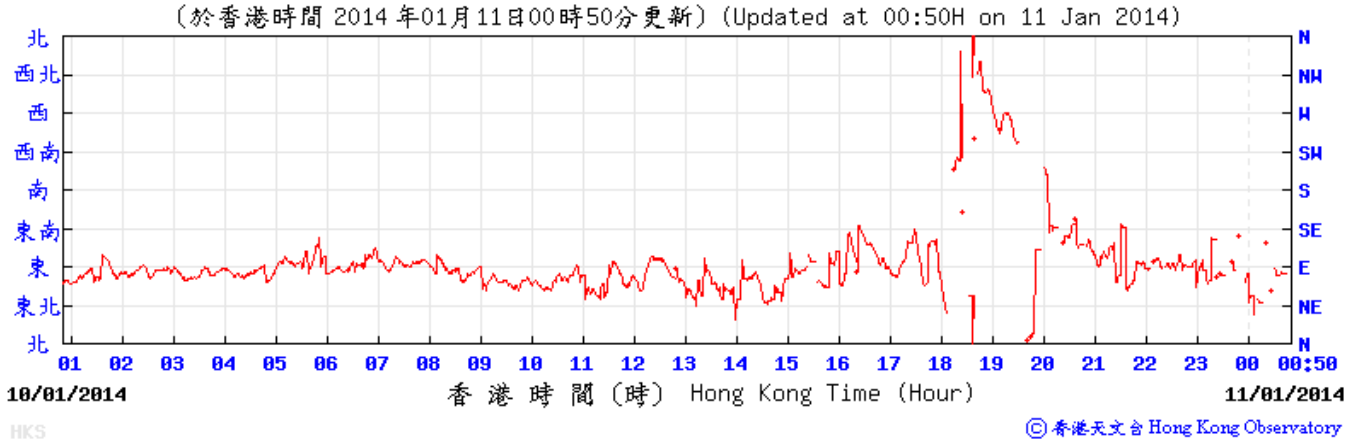
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Weather Conditions at Wong Chuk Hang Weather Station during Monitoring Period









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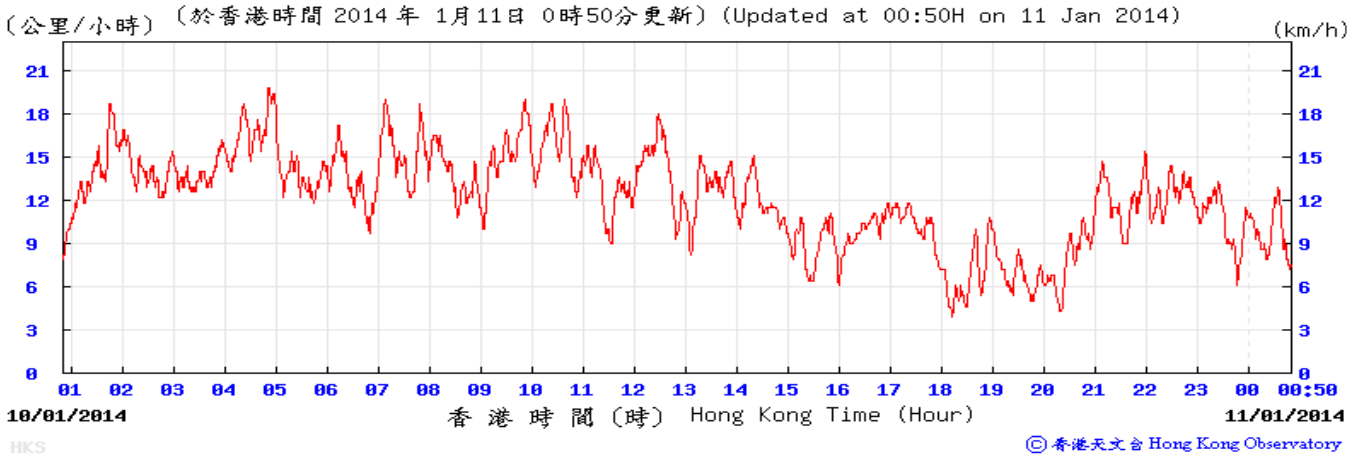

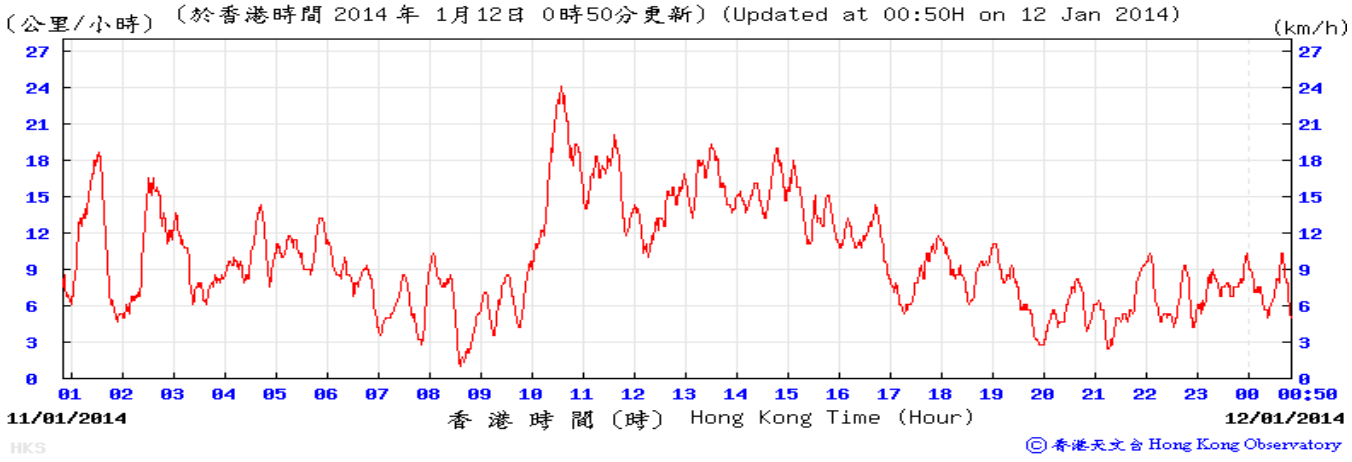

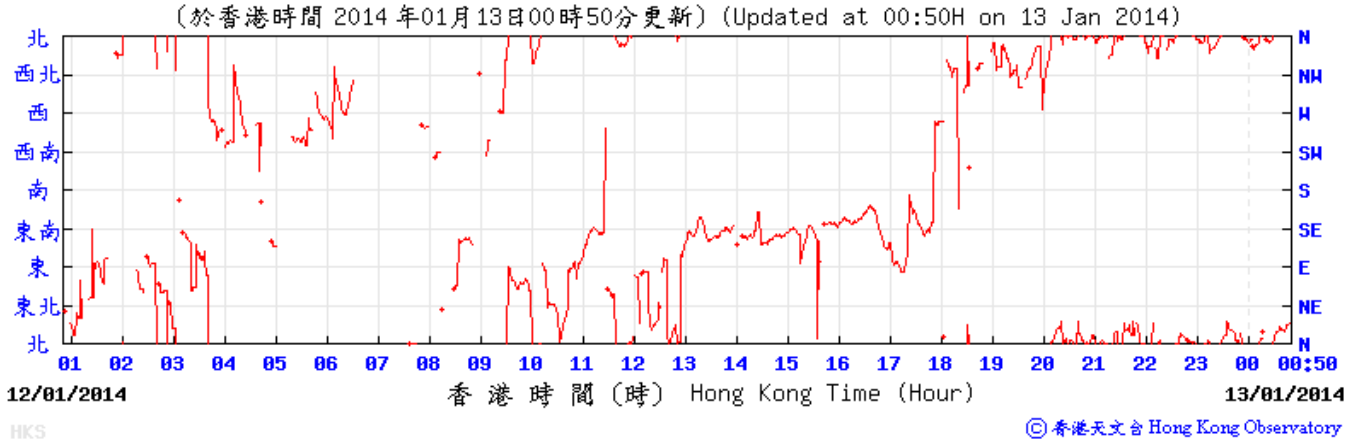

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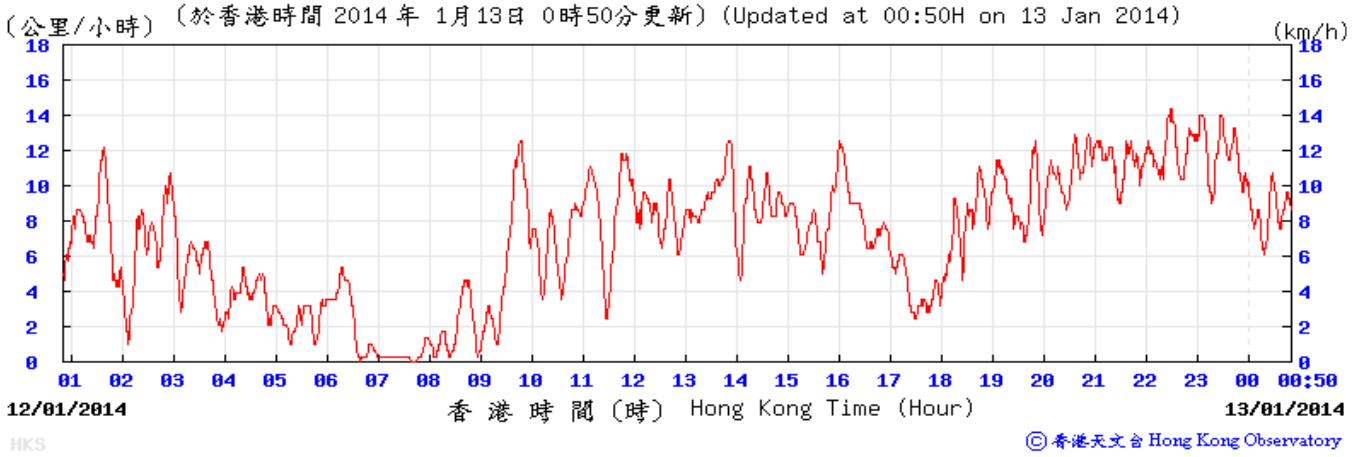

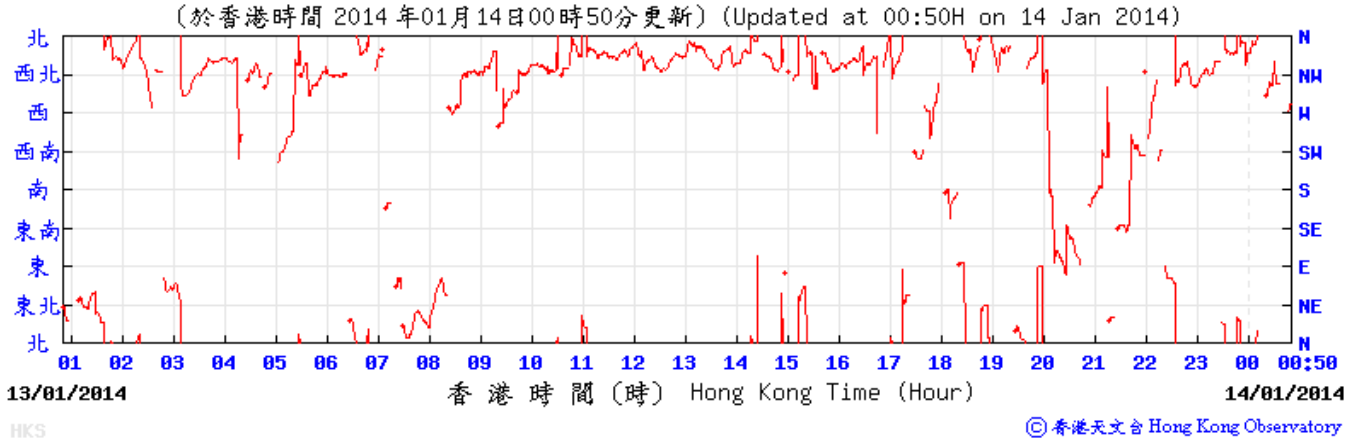

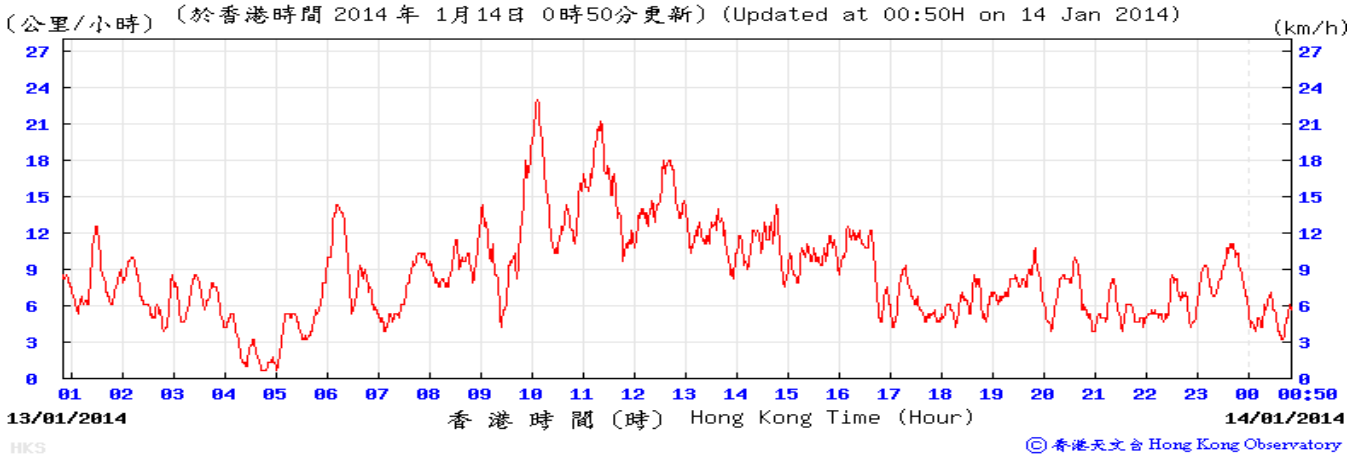

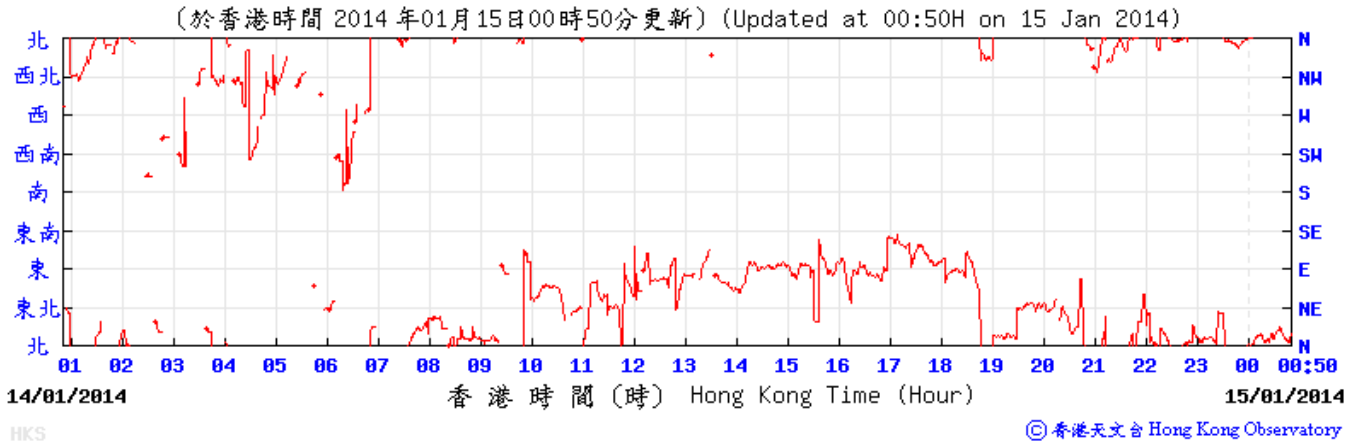

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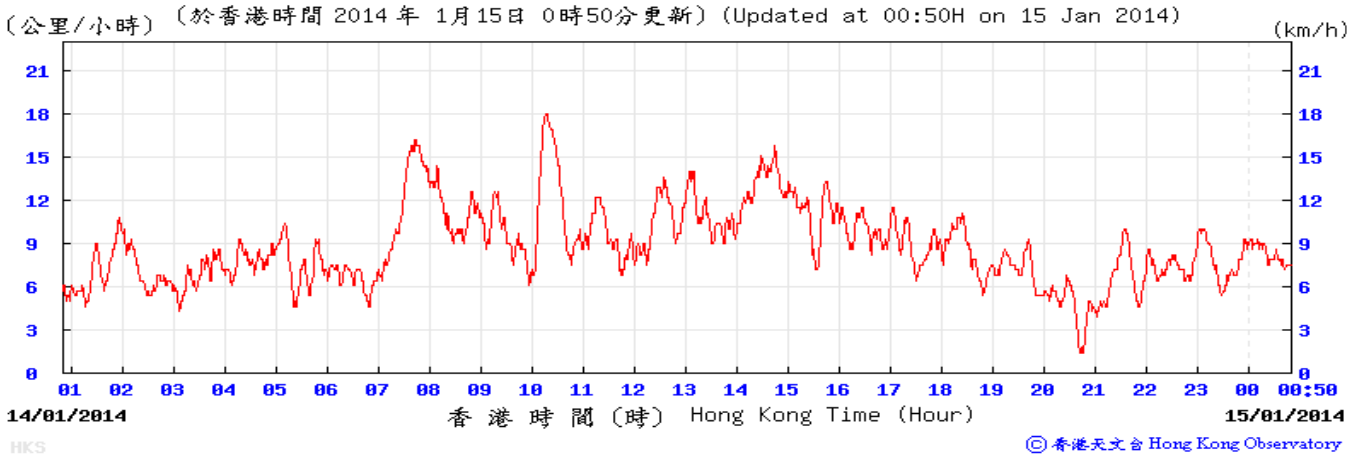

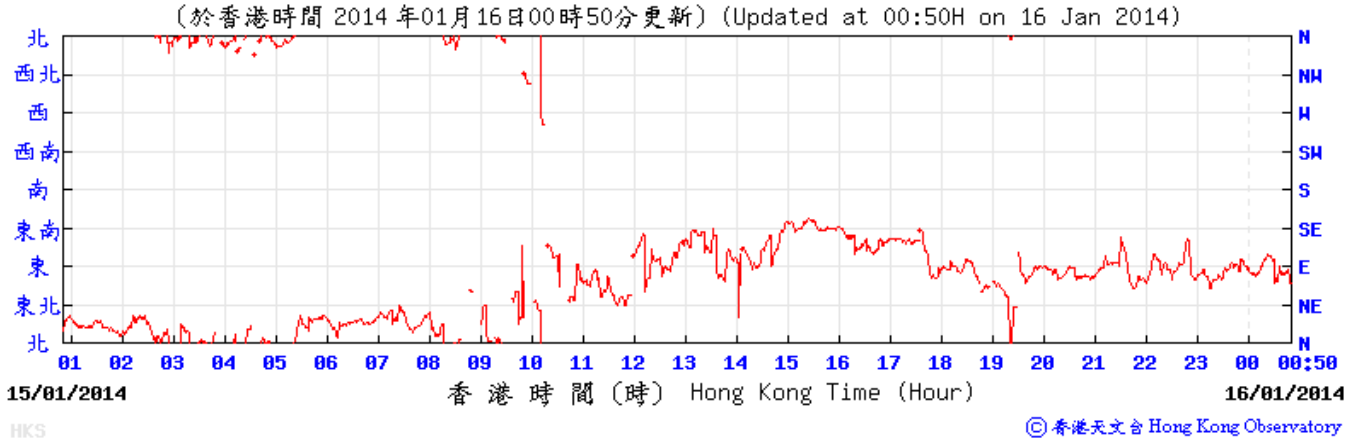

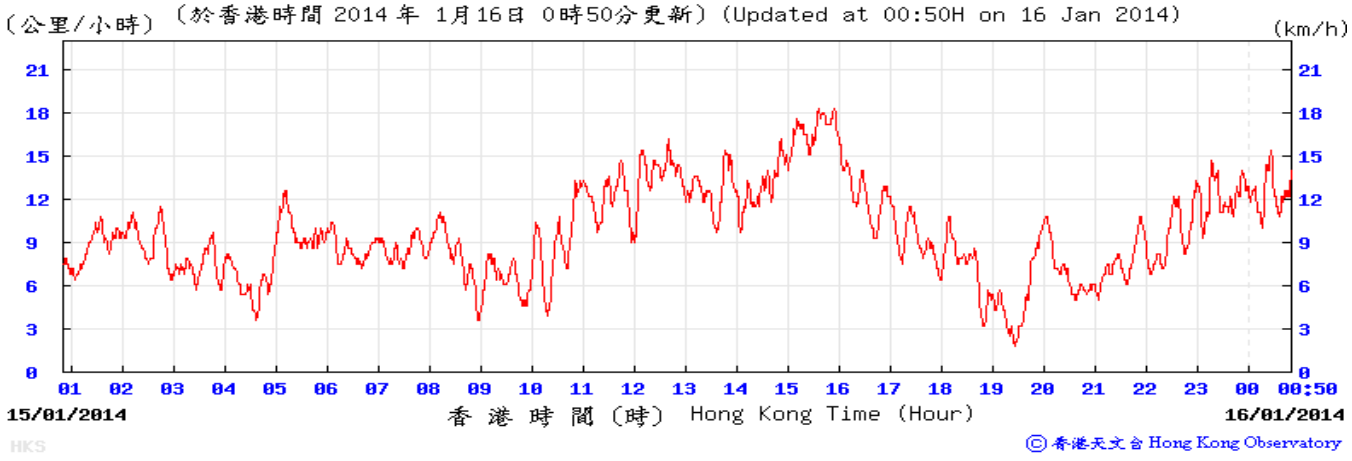

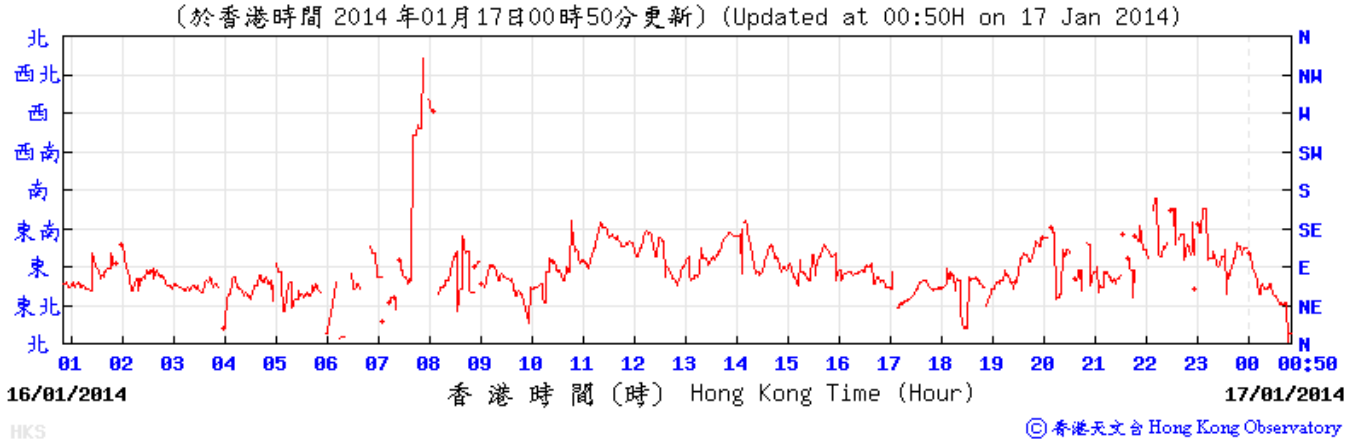

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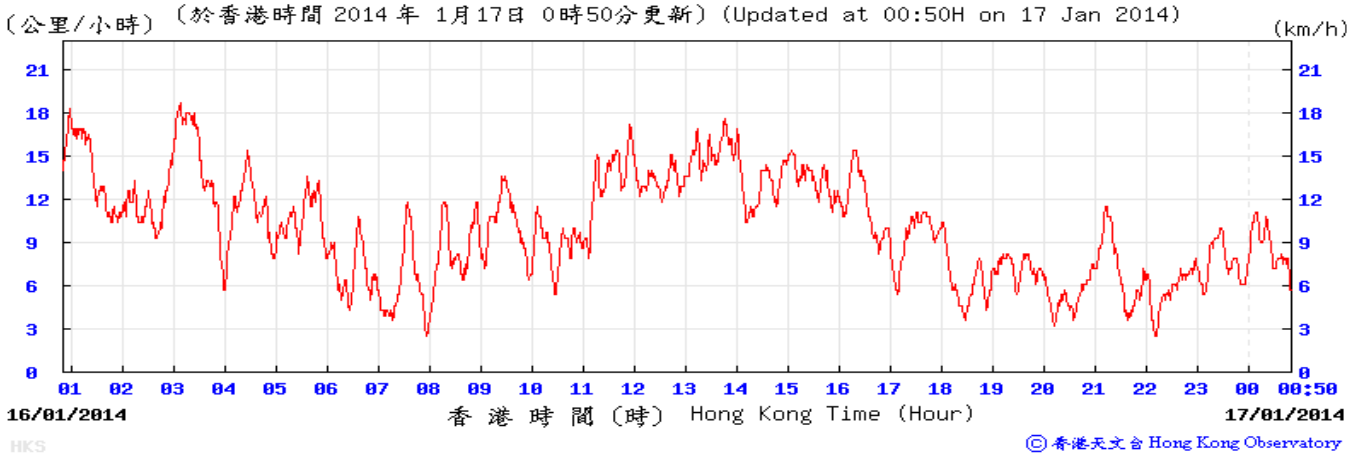

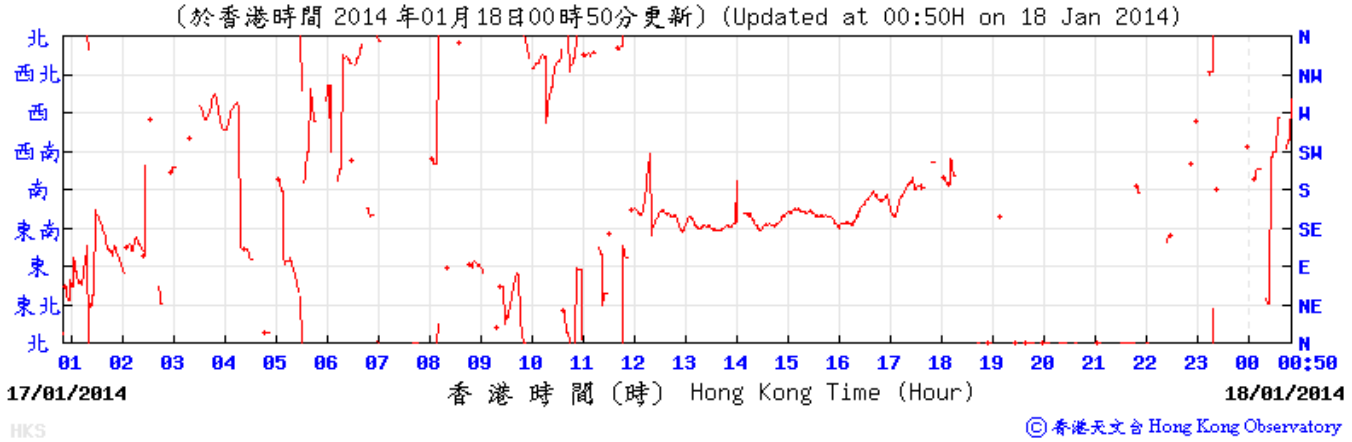

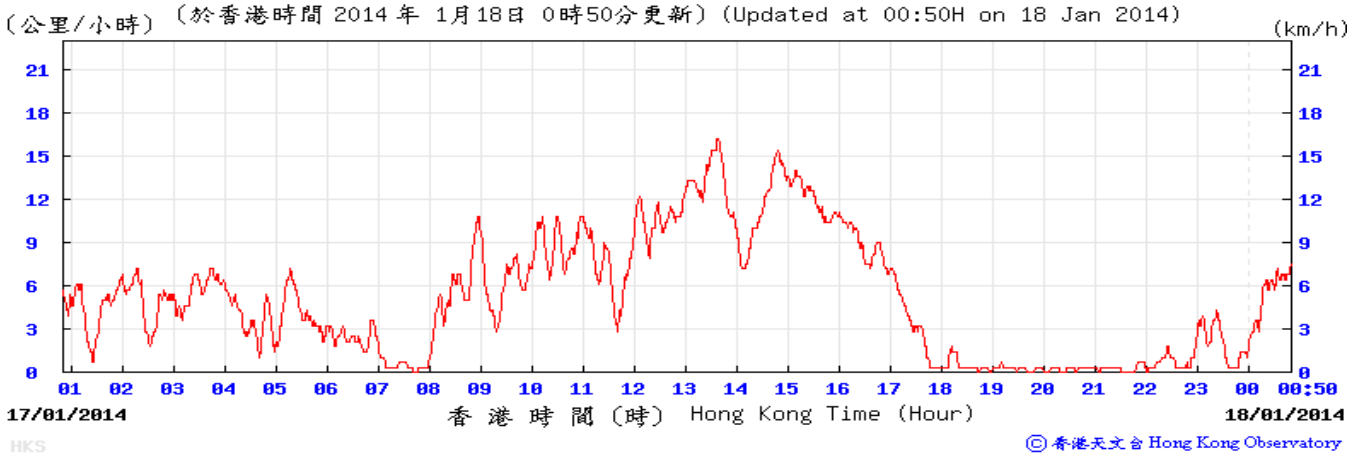

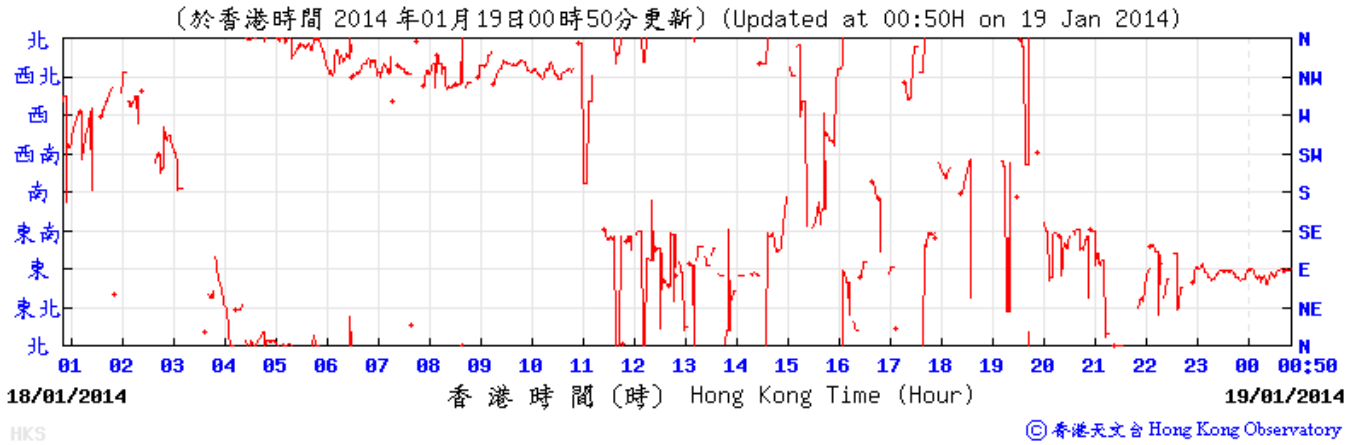

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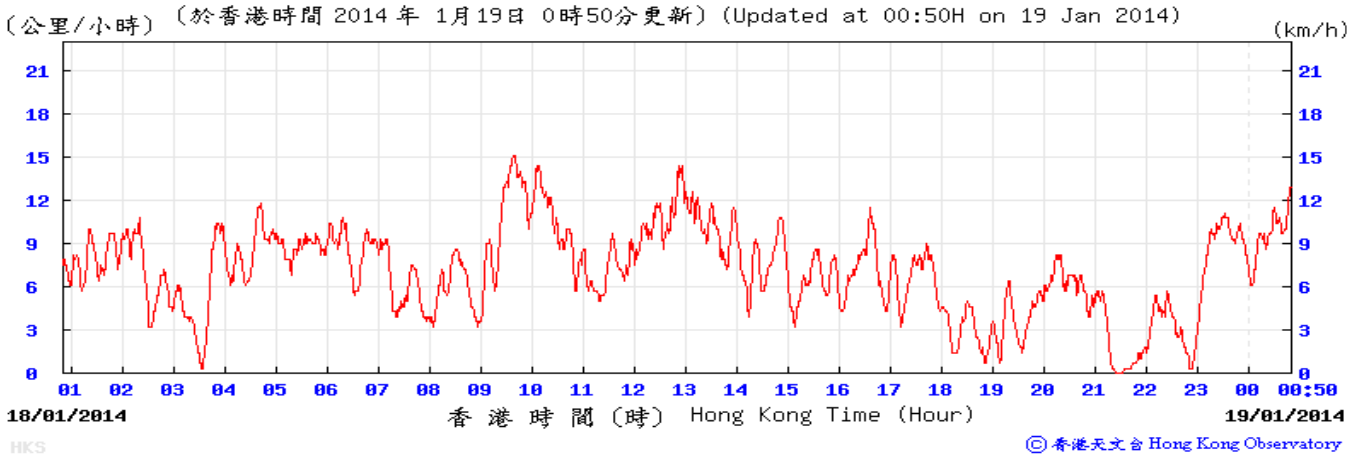

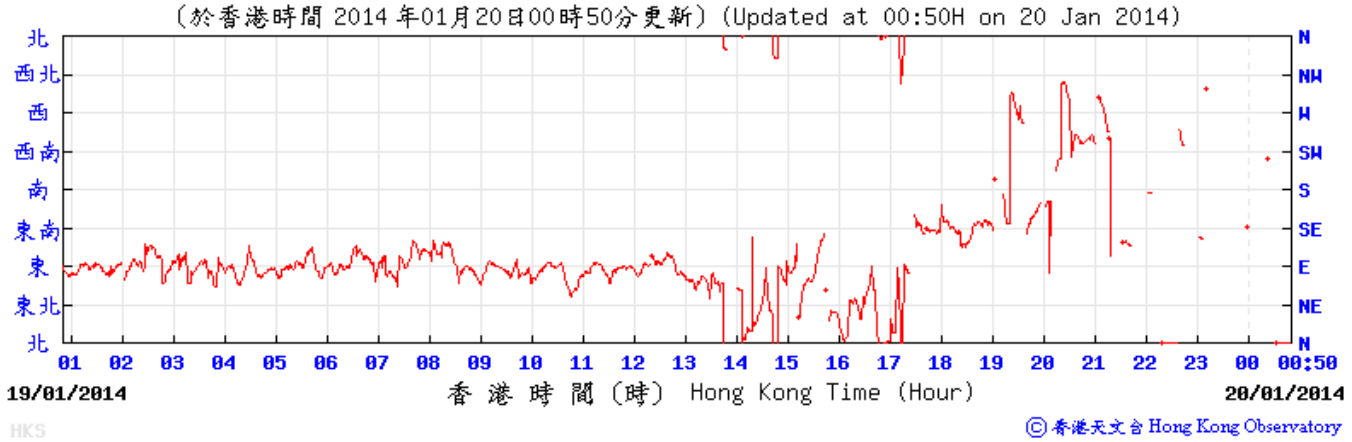

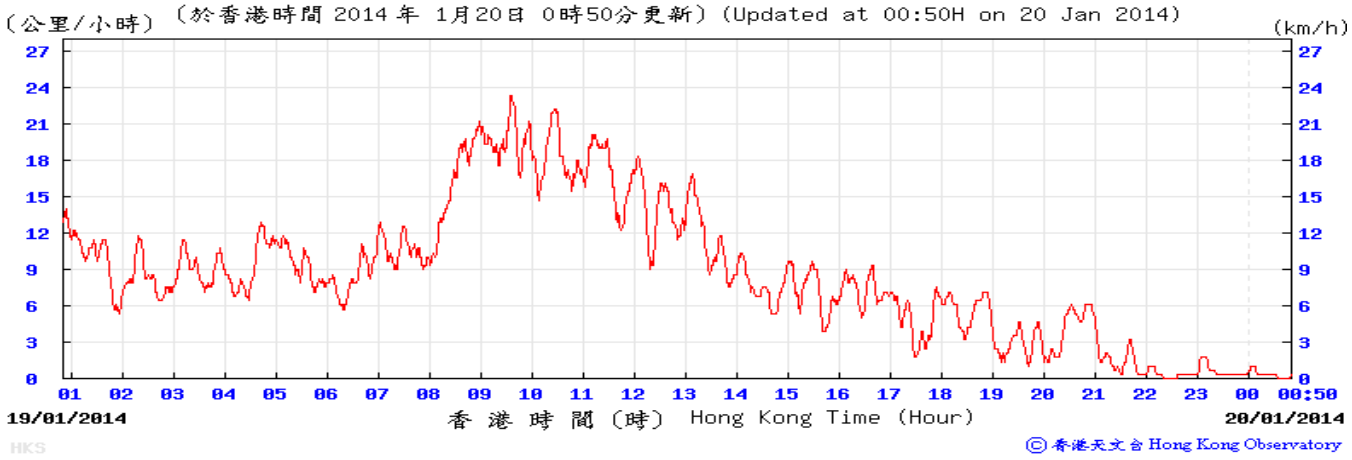

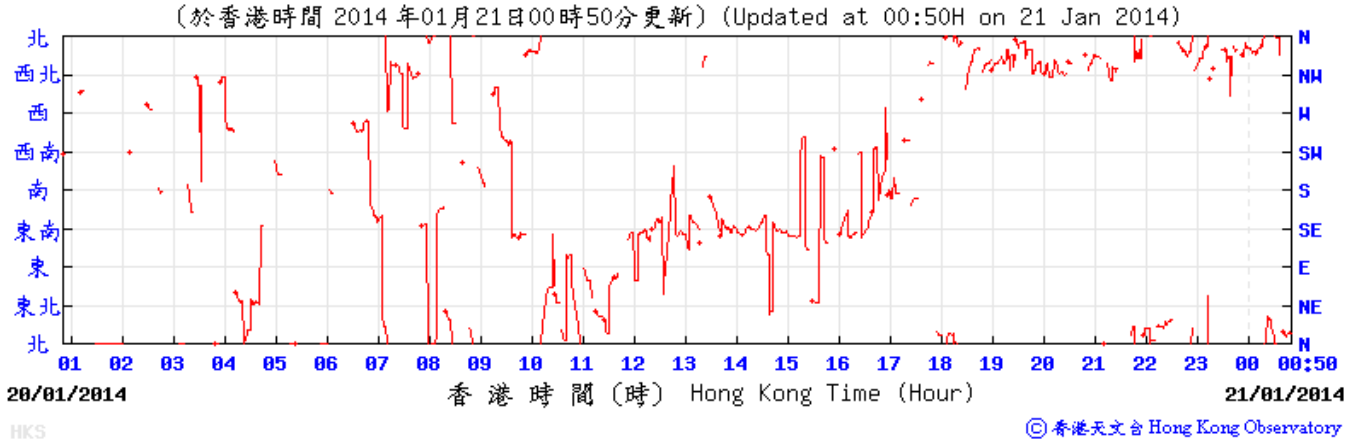

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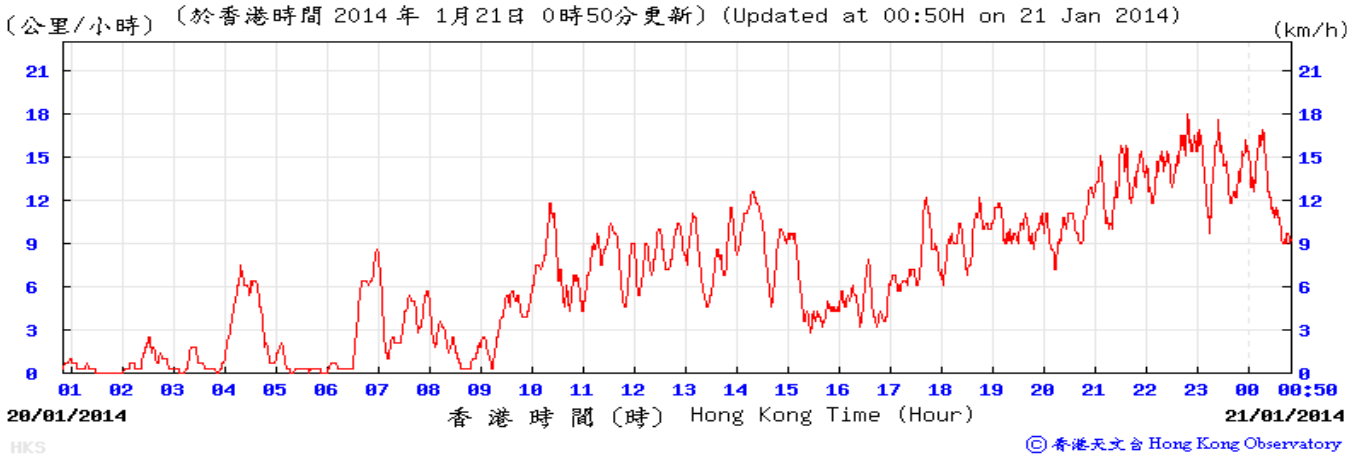

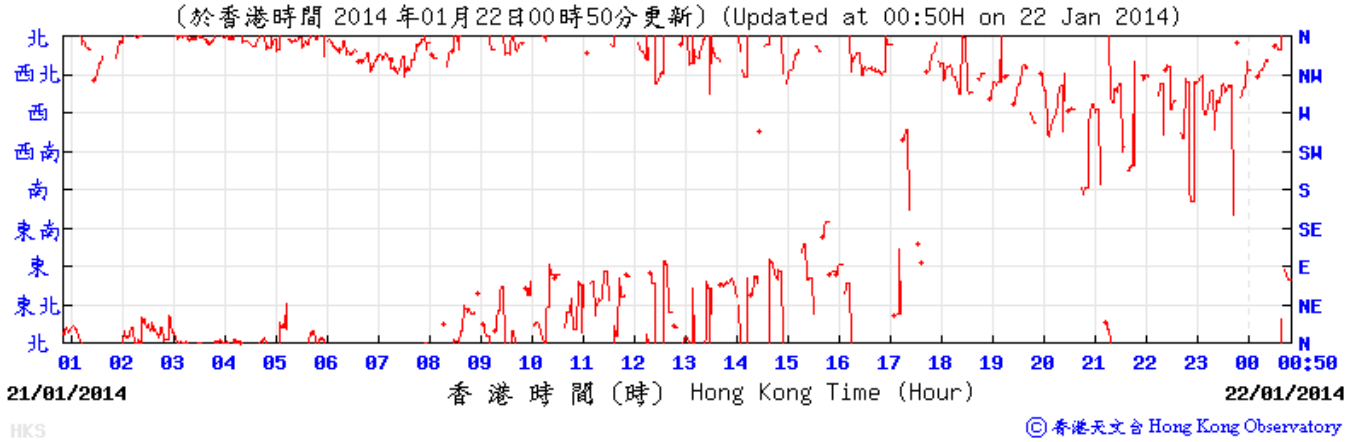

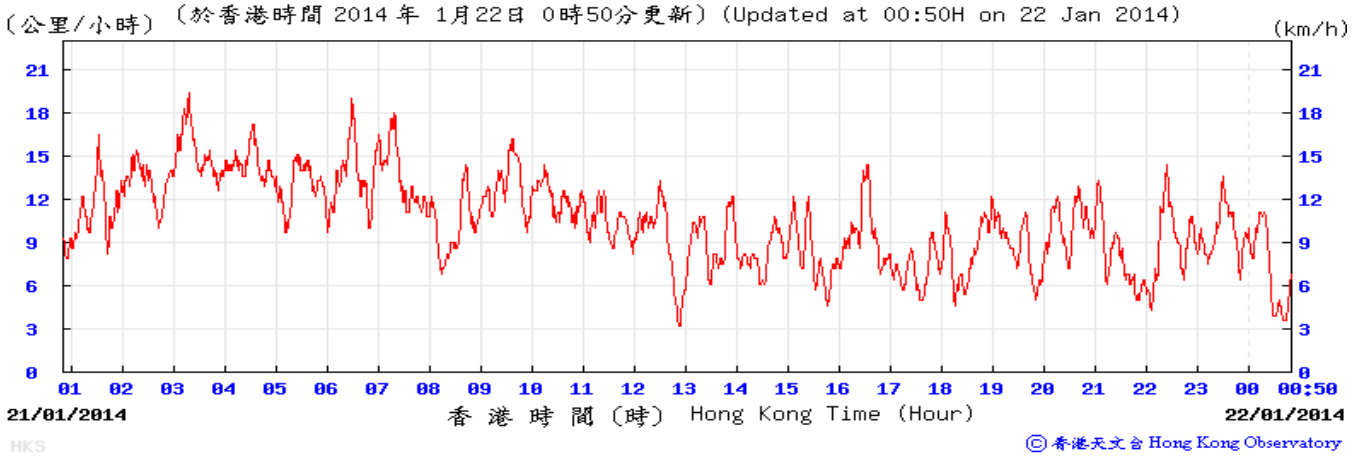

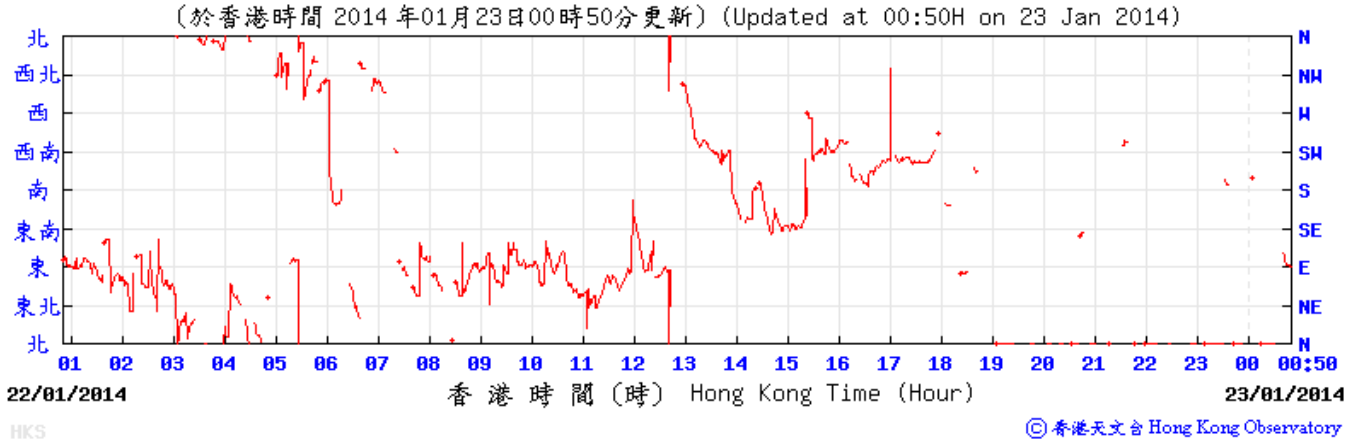

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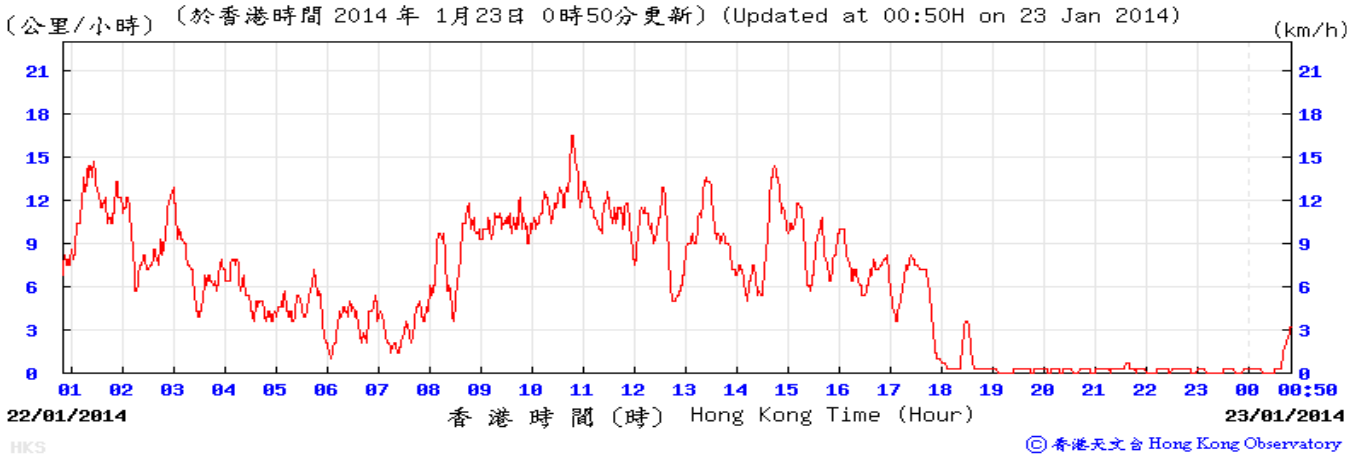

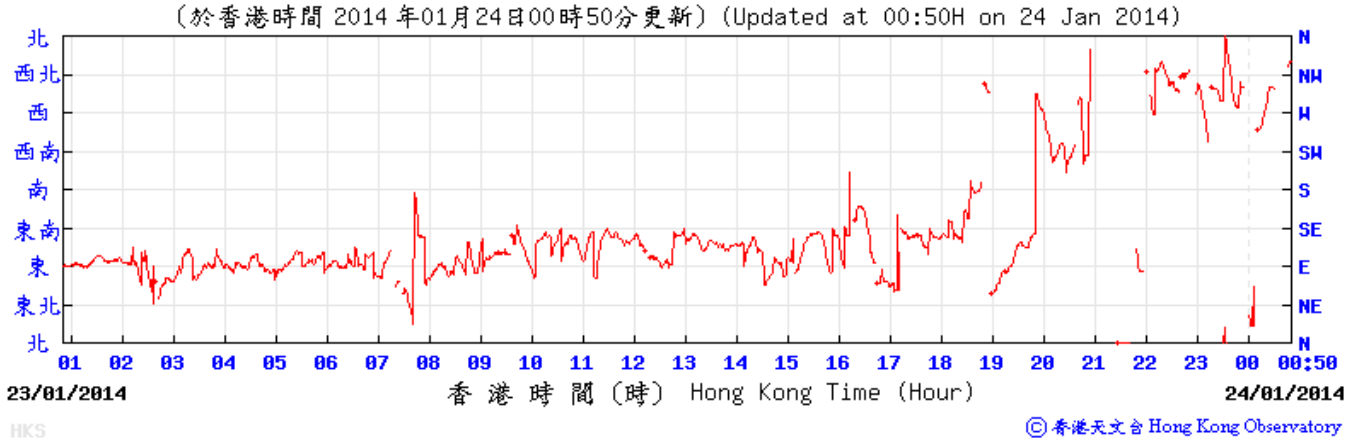

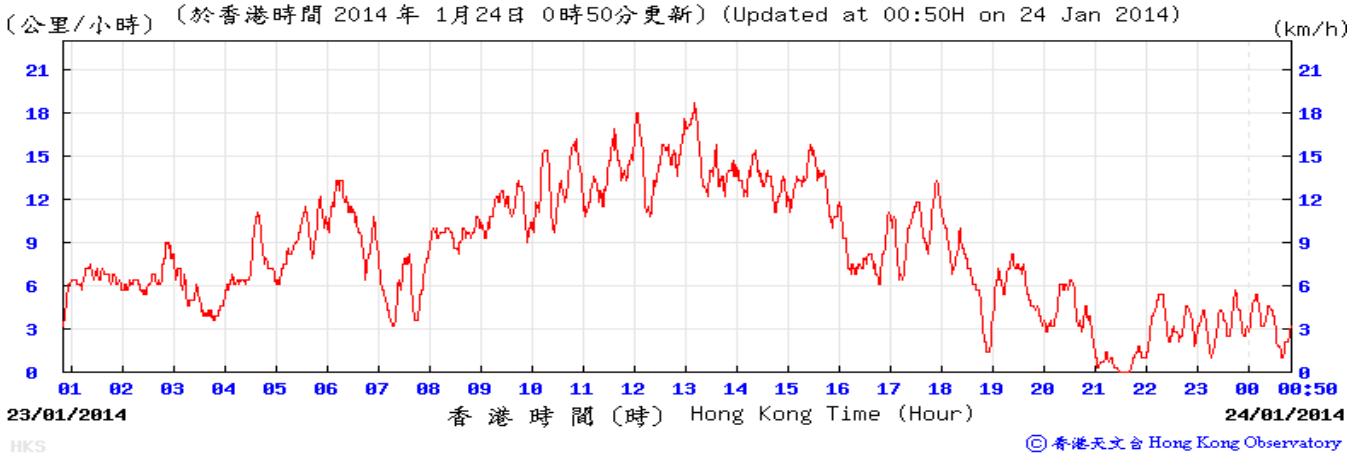

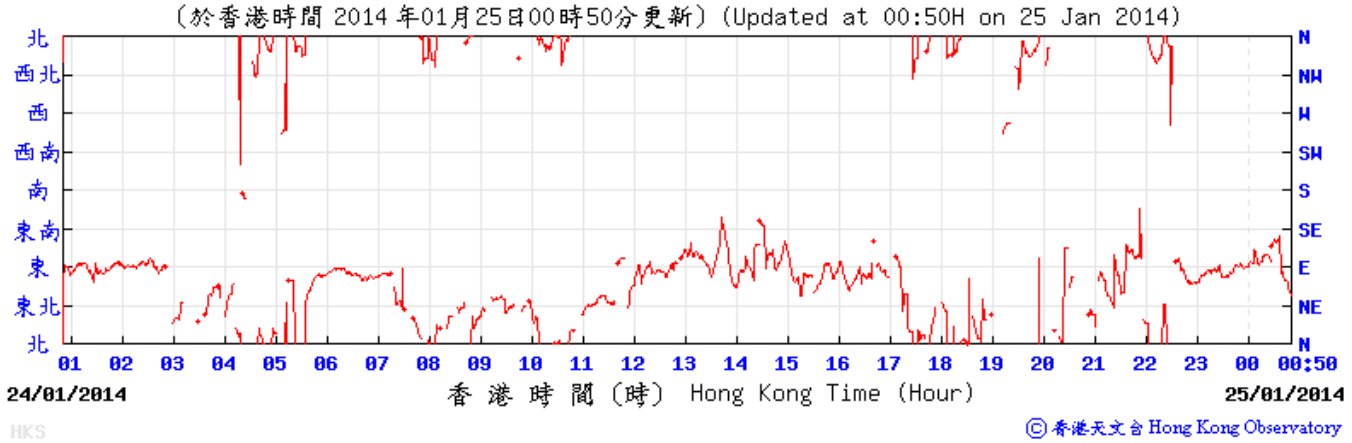

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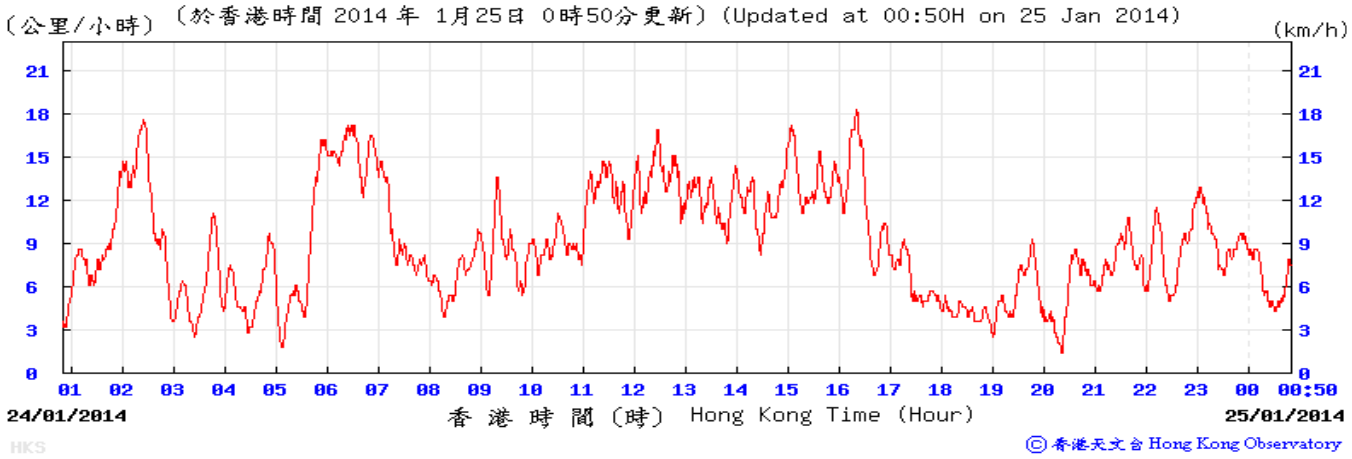

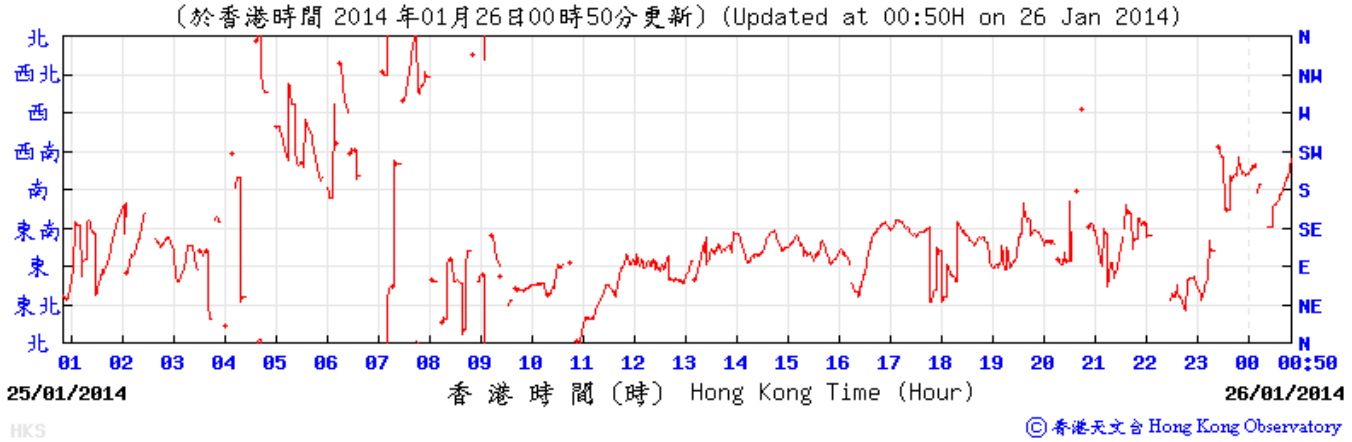

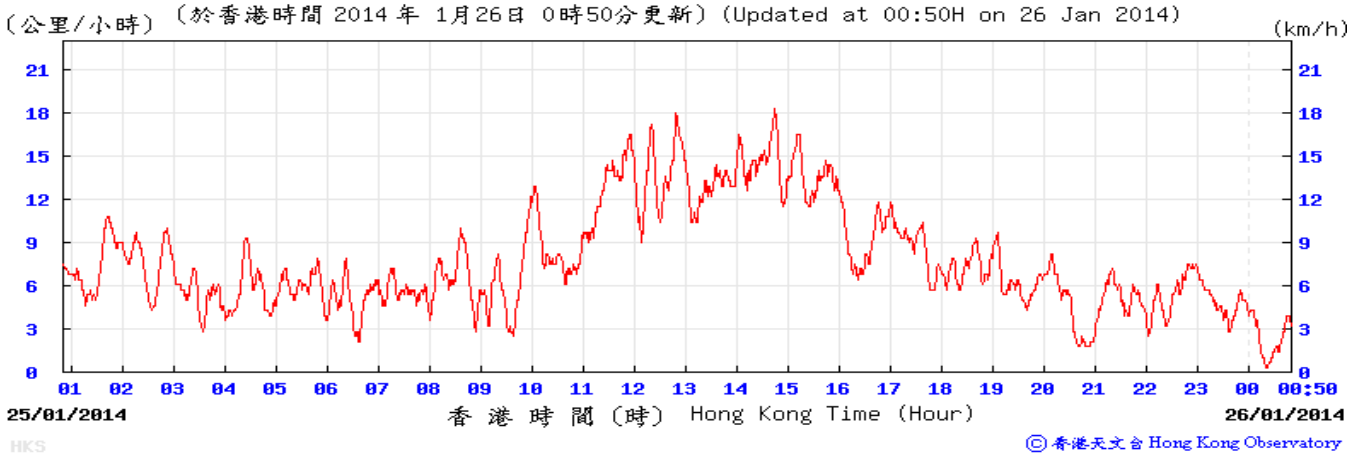

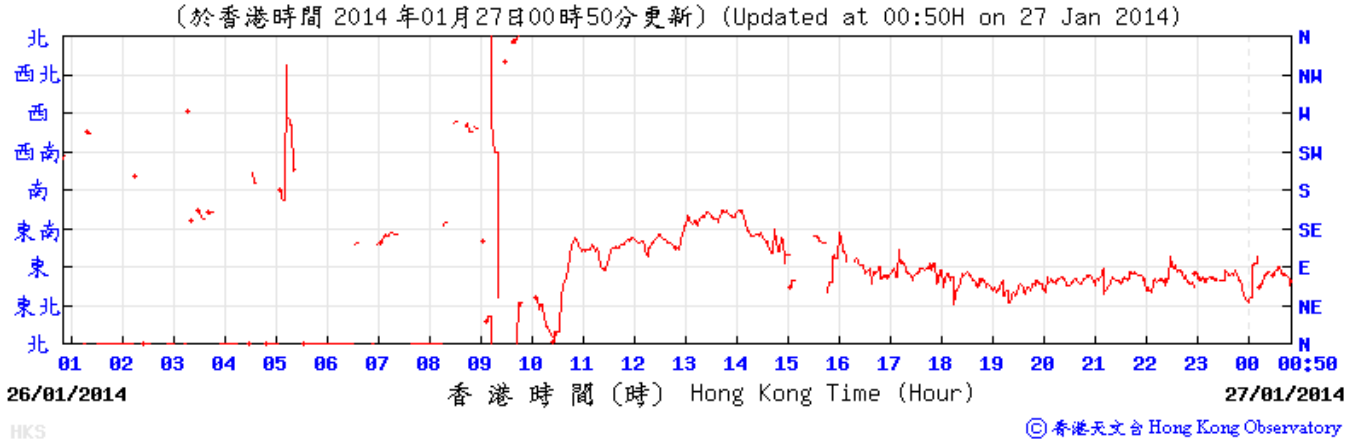

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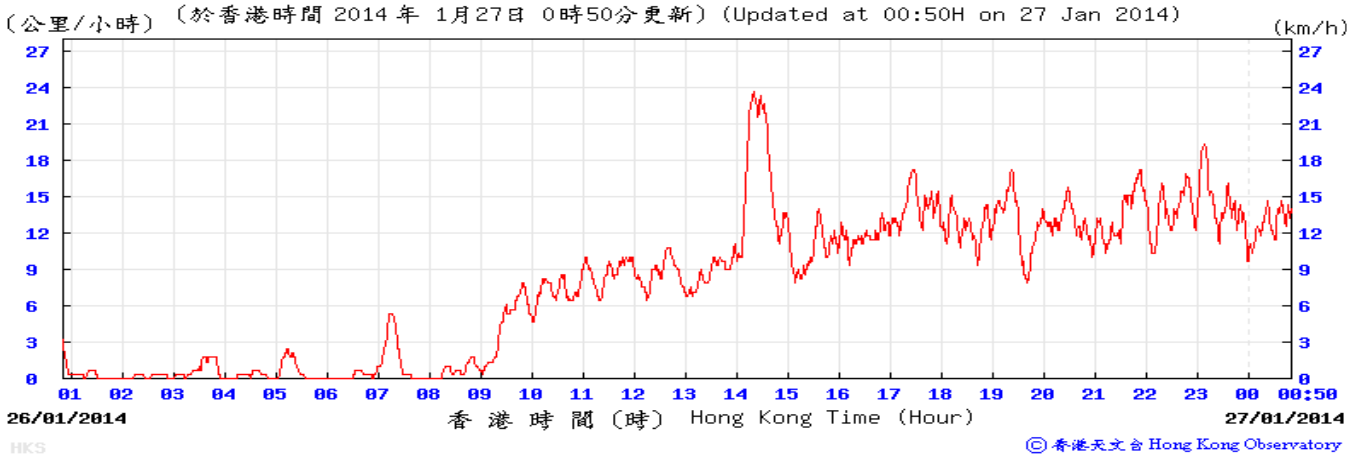

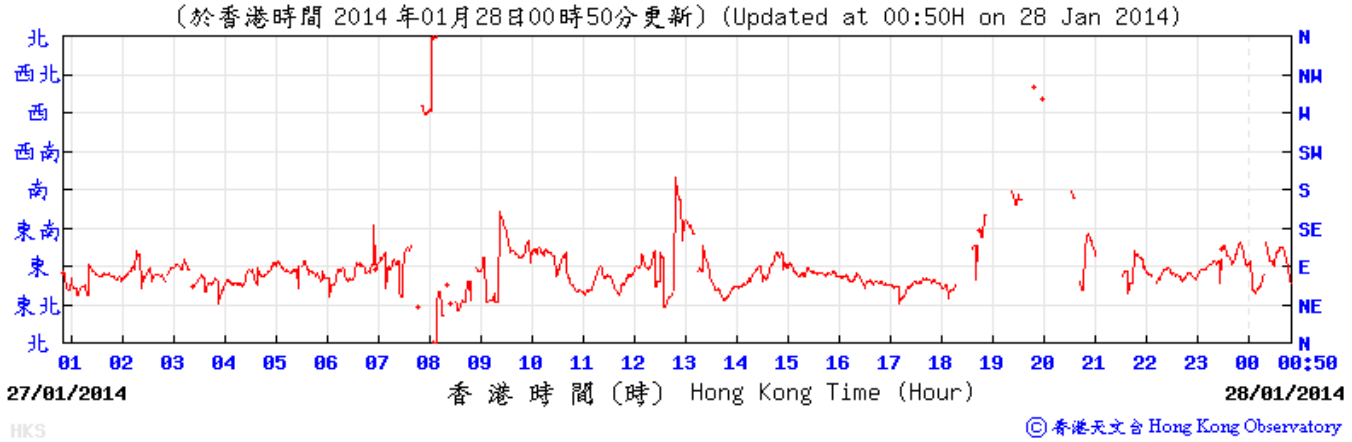

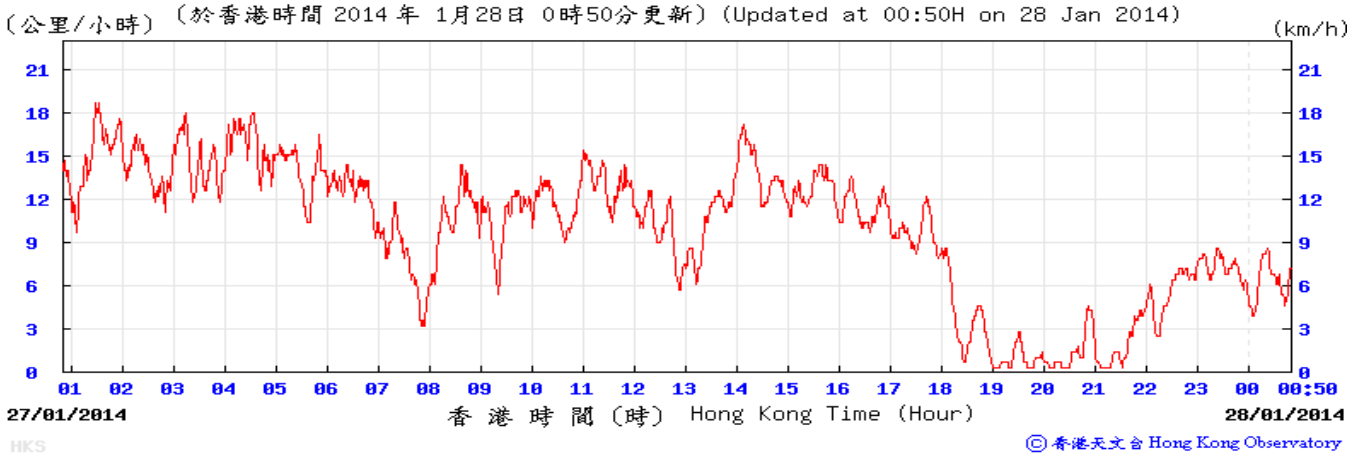

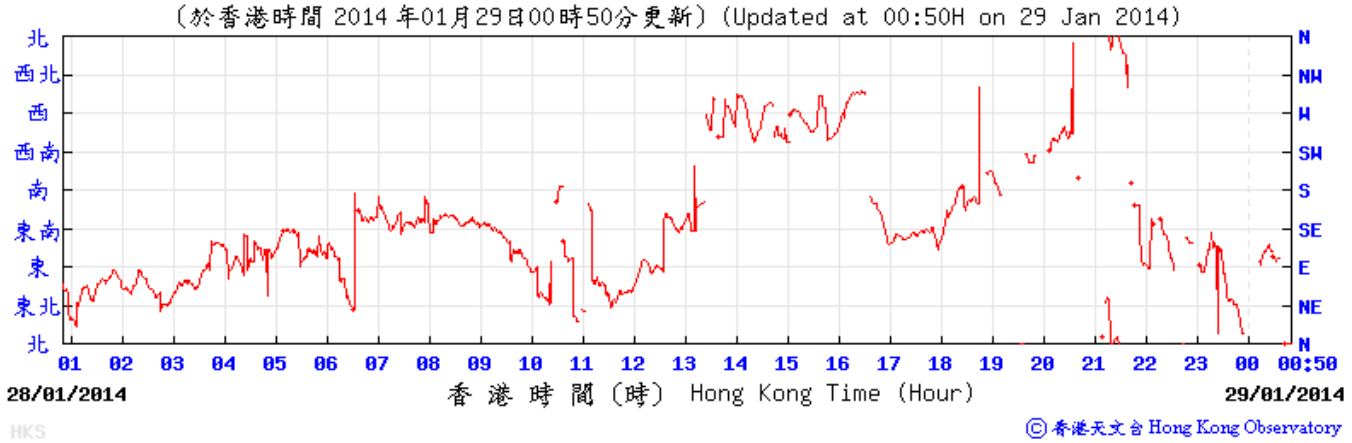

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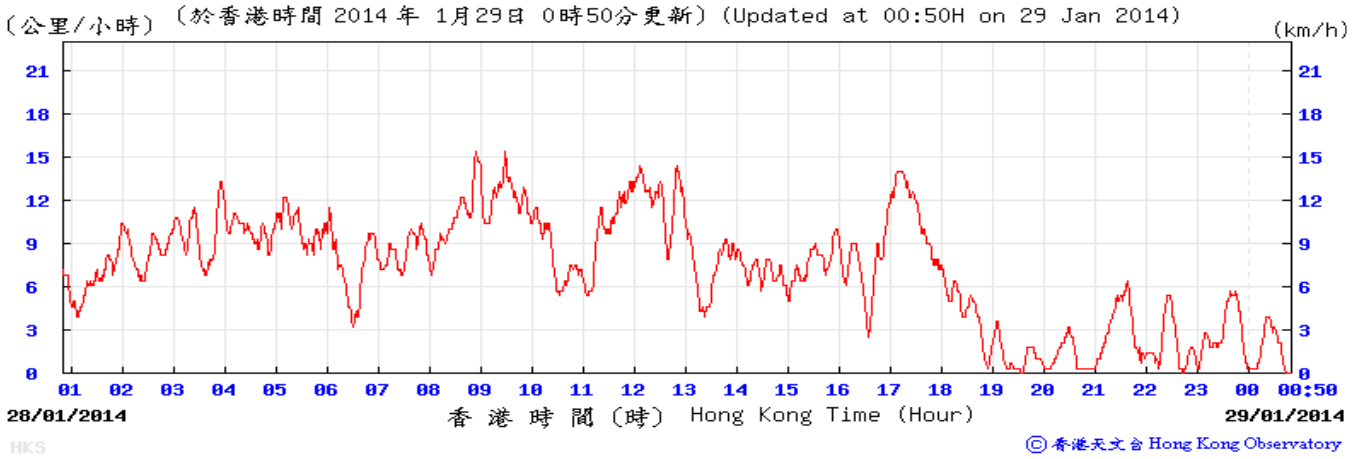

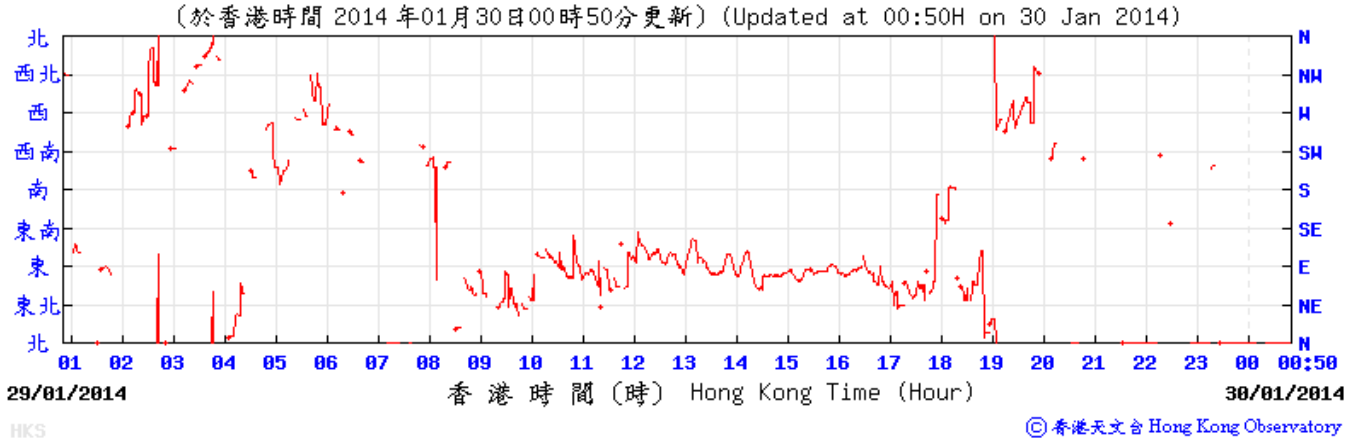

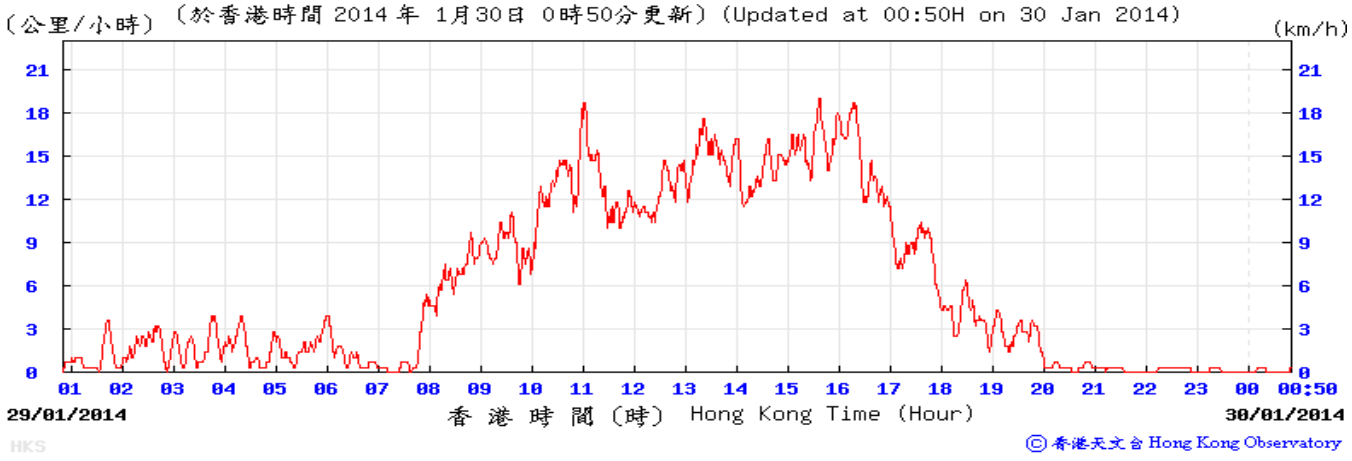

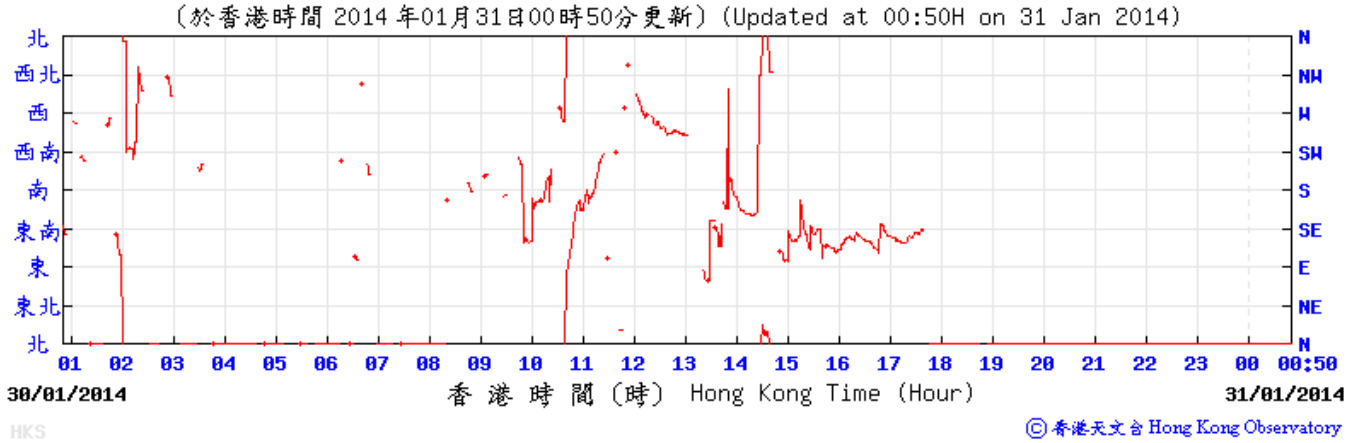

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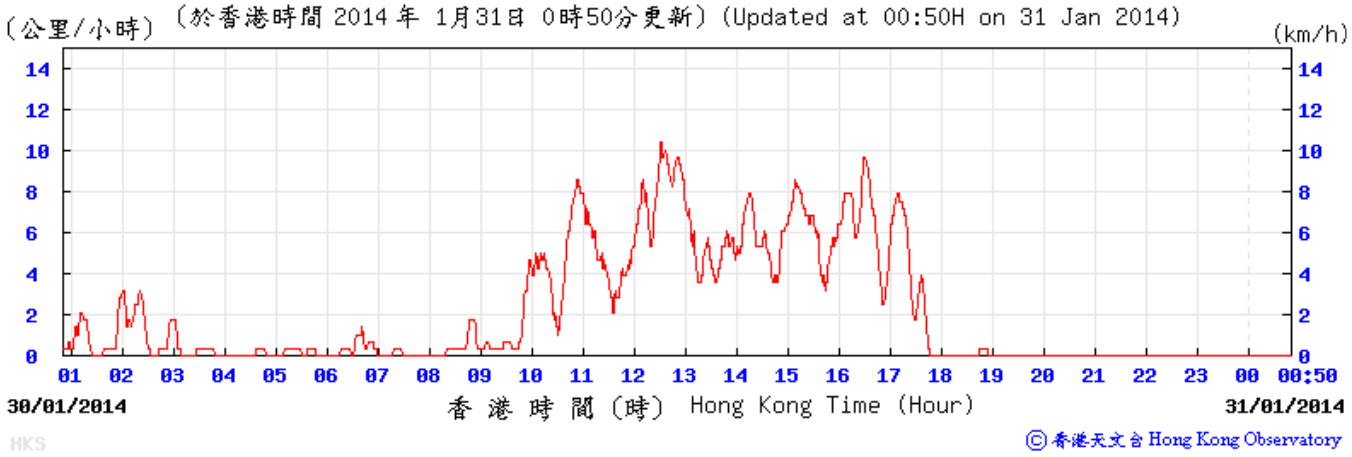

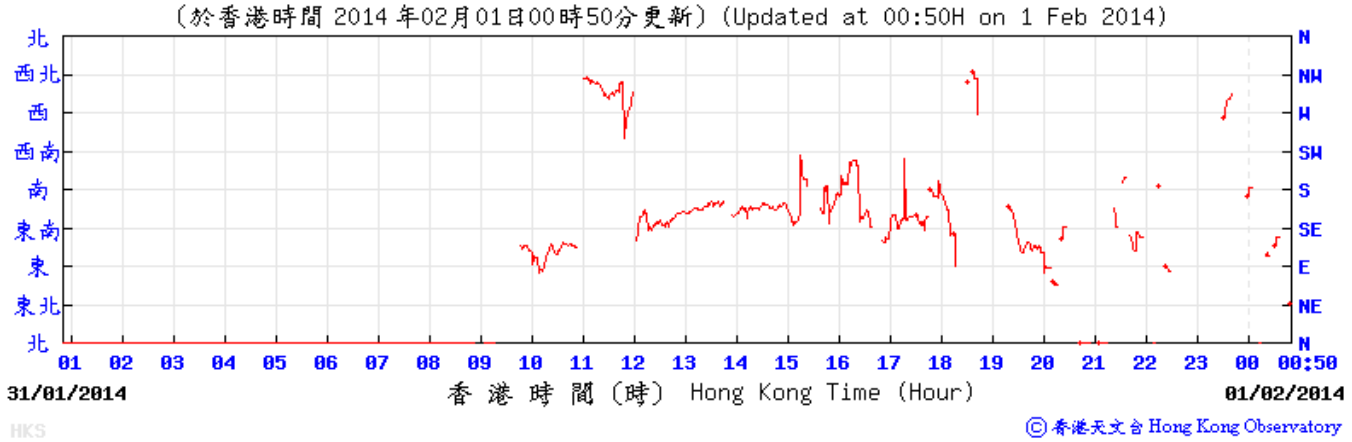

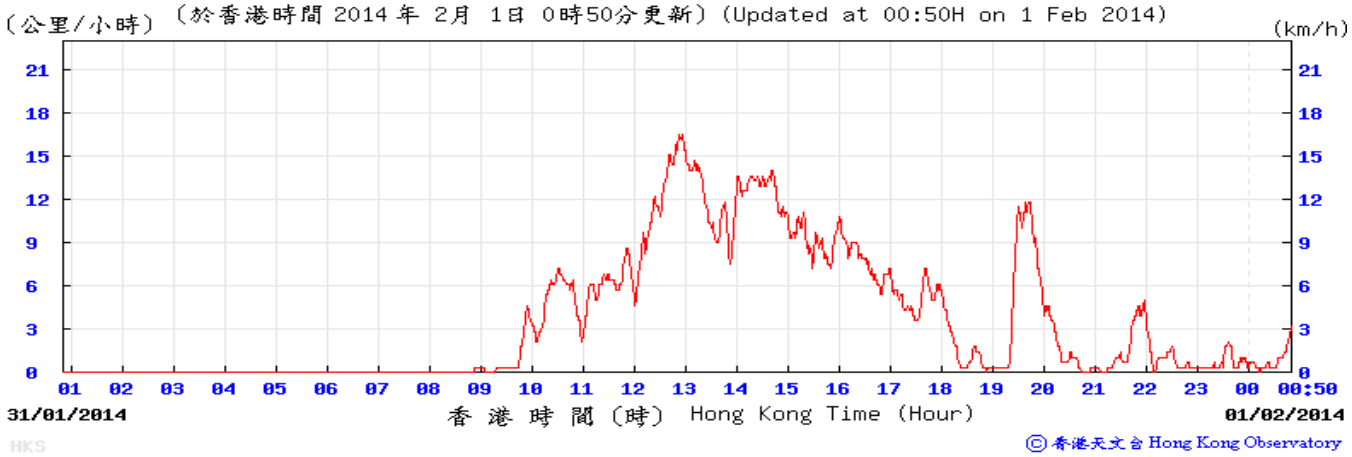

APPENDIX F

CALIBRATION CERTIFICATES FOR NOISE AND AIR QUALITY MONITORING EQUIPMENT

Summary of Calibration Date of Monitoring Equipment:

Equipment	Description	ID	Latest Calibration Date	Next Calibration Date
Calibrator for Sound Level Meters	B&K 4231	3003246	21st May 2013	20th May 2014
Calibrator for Sound Level Meters	B&K 4231	3004068	17th July 2013	16th July 2014
Integrated Sound Level Meters	B&K 2238	2800932	26th August 2013	25th August 2014
Integrated Sound Level Meters	B&K 2238	2684503	5th September 2013	4th September 2014
Laser Dust Monitor	LD-3B-001	974350	11th October 2013	10th October 2014
Laser Dust Monitor	LD-3B-002	934393	11th October 2013	10th October 2014
High Volume Sampler	TE-5170	2098 (Cyberport PTW)	3th January 2014	2nd March 2014
High Volume Sampler	TE-5170	2099 (Aberdeen PTW)	22nd January 2014	21st March 2014
High Volume Sampler	TE-5170	2100 (Wah Fu PTW)	29th January 2014	28th March 2014
High Volume Sampler	TE-5170	2146 (Fung Mat Road Site)	18th January 2014	17th March 2014

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C135637
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-2291)

Description / 儀器名稱	:	Integrating Sound Level Meter
Manufacturer / 製造商	:	Brüel & Kjær
Model No. / 型號	:	2238
Serial No. / 編號	:	2684503
Supplied By / 委託者	:	Atkins China Limited 13/F, Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C
Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 5 September 2013

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試 : K C Lee

Certified By 核證 : K M Wu

Date of Issue 簽發日期 : 9 September 2013

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C135637
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C130019
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

UUT Setting				Applied Value		UUT
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
50 - 130	L_{AFP}	A	F	94.00	1	94.1

6.1.1.2 After Self-calibration

UUT Setting				Applied Value		UUT	IEC 60651
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Type 1 Spec. (dB)
50 - 130	L_{AFP}	A	F	94.00	1	94.0	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
50 - 130	L_{AFP}	A	F	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

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Certificate of Calibration
校正證書

Certificate No. : C135637
證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	Ref.
	L_{ASP}		S			94.0	± 0.1
	L_{AIP}		I			94.0	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L_{AFP}	A	F	106.0	Continuous	106.0	Ref.
	L_{AFMax}				200 ms	105.0	-1.0 ± 1.0
	L_{ASP}		S		Continuous	106.0	Ref.
	L_{ASMax}				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{AFP}	A	F	94.00	31.5 Hz	54.7	-39.4 ± 1.5
					63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	95.0	+1.0 ± 1.0
					8 kHz	92.8	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.7	-4.3 (+3.0 ; -6.0)

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6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{CFP}	C	F	94.00	31.5 Hz	91.1	-3.0 ± 1.5
					63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.1	-0.8 ± 1.0
					8 kHz	90.9	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.8	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L_{Acq}	A	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5
						$1/10^2$		90	90.0	± 0.5
			60 sec.			$1/10^3$		80	79.7	± 1.0
			5 min.			$1/10^4$		70	69.7	± 1.0

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2682524

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB	: 31.5 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
Burst equivalent level		: ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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Certificate of Calibration
校正證書

Certificate No. : C135383
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-2172)

Description / 儀器名稱 : Integrating Sound Level Meter
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2238
Serial No. / 編號 : 2800932
Supplied By / 委託者 : Atkins China Limited
13/F, Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C
Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 26 August 2013

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試 : K C Lee

Certified By 核證 : K M Wu

Date of Issue 簽發日期 : 28 August 2013

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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Certificate of Calibration
校正證書

Certificate No. : C135383
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C130019
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.1

6.1.1.2 After Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.1	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

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Certificate of Calibration
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6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	Ref.
	L_{ASP}		S			94.1	± 0.1
	L_{AIP}		I			94.1	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L_{AFP}	A	F	106.0	Continuous	106.0	Ref.
	L_{AFMax}				200 ms	105.0	-1.0 ± 1.0
	L_{ASP}		S		Continuous	106.0	Ref.
	L_{ASMax}				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{AFP}	A	F	94.00	31.5 Hz	54.7	-39.4 ± 1.5
					63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	94.9	+1.0 ± 1.0
					8 kHz	92.8	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.7	-4.3 (+3.0 ; -6.0)

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6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{CFP}	C	F	94.00	31.5 Hz	91.1	-3.0 ± 1.5
					63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.1	-0.8 ± 1.0
					8 kHz	90.9	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.7	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L_{Aeq}	A	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5
						$1/10^2$		90	90.1	± 0.5
			60 sec.			$1/10^3$		80	79.8	± 1.0
			5 min.			$1/10^4$		70	69.7	± 1.0

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2793199

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB	: 31.5 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
Burst equivalent level		: ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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Certificate of Calibration
校正證書

Certificate No. : C133030
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-1223)

Description / 儀器名稱	:	Acoustical Calibrator
Manufacturer / 製造商	:	Brüel & Kjær
Model No. / 型號	:	4231
Serial No. / 編號	:	3003246
Supplied By / 委託者	:	Atkins China Limited 13/F, Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C
Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期 : 21 May 2013

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By / 測試 : K C Lee

Certified By / 核證 : K M Wu

Date of Issue / 簽發日期 : 23 May 2013

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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Certificate of Calibration
校正證書

Certificate No. : C133030
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1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C123541
CL281	Multifunction Acoustic Calibrator	DC110233
TST150A	Measuring Amplifier	C120886

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

5.1.1 Before Adjustment

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.1	± 0.2	± 0.2
114 dB, 1 kHz	114.1		

5.1.2 After Adjustment

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.0		

5.2 Frequency Accuracy

5.2.1 Before Adjustment

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

5.2.2 After Adjustment

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

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Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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Certificate of Calibration
校正證書

Certificate No. : C134439
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC13-1812)

Description / 儀器名稱	:	Acoustical Calibrator
Manufacturer / 製造商	:	Brüel & Kjær
Model No. / 型號	:	4231
Serial No. / 編號	:	3004068
Supplied By / 委託者	:	Atkins China Limited 13/F, Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C
Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期 : 17 July 2013

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試 : K C Lee

Certified By 核證 : K M Wu

Date of Issue 簽發日期 : 22 July 2013

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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Certificate of Calibration
校正證書

Certificate No. : C134439
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C133632
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C120886

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

5.1.1 Before Adjustment

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.1	± 0.2	± 0.2
114 dB, 1 kHz	114.1		

5.1.2 After Adjustment

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.0		

5.2 Frequency Accuracy

5.2.1 Before Adjustment

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

5.2.2 After Adjustment

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

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Certificate of Calibration
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Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : Cyber Port
Calibrated by : K.F.Ho
Date : 03/01/2014

Sampler
Model : TE-5170
Serial Number : S/N 2098

Calibration Orfice and Standard Calibration Relationship
Serial Number : 2454
Service Date : 12 Mar 2013
Slope (m) : 2.05818
Intercept (b) : 0.01929
Correlation Coefficient(r) : 0.99991

Standard Condition
Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition
Pa (hpa) : 1016
Ta(K) : 294

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	10.9	3.329	1.608	61.0	61.50
2	13 holes	9.4	3.091	1.493	55.0	55.45
3	10 holes	7.2	2.705	1.305	48.0	48.40
4	7 holes	5.2	2.299	1.108	40.0	40.33
5	5 holes	2.9	1.717	0.825	28.0	28.23

Sampler Calibration Relationship

Slope(m):41.769 Intercept(b): -6.166 Correlation Coefficient(r): 0.9994

Checked by: Magnum Fan Date: 06/01/2014

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : Wah Fu Estate
Calibrated by : K.F.Ho
Date : 29/01/2014

Sampler
Model : GMWS-2310 ACCU-VOL
Serial Number : S/N 2100

Calibration Orfice and Standard Calibration Relationship
Serial Number : 2323
Service Date : 26 Dec 2012
Slope (m) : 2.09107
Intercept (b) : -0.02838
Correlation Coefficient(r) : 0.99996

Standard Condition
Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition
Pa (hpa) : 1019
Ta(K) : 292

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	11.2	3.391	1.638	58	58.77
2	13 holes	9.2	3.073	1.484	51	51.67
3	10 holes	7.2	2.719	1.312	44	44.58
4	7 holes	5.4	2.354	1.135	37	37.49
5	5 holes	3.2	1.812	0.871	27	27.37

Sampler Calibration Relationship

Slope(m):40.762 Intercept(b): -8.523 Correlation Coefficient(r): 0.9991

Checked by: Magnum Fan Date: 02/02/2014

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : Aberdeen
Calibrated by : K.F.Ho
Date : 22/01/2014

Sampler
Model : TE-5170
Serial Number : S/N2099

Calibration Orfice and Standard Calibration Relationship
Serial Number : 2454
Service Date : 12 Mar 2013
Slope (m) : 2.05818
Intercept (b) : 0.01929
Correlation Coefficient(r) : 0.99991

Standard Condition
Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition
Pa (hpa) : 1025
Ta(K) : 289

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	11.2	3.418	1.652	61	62.31
2	13 holes	9.4	3.132	1.512	54	55.16
3	10 holes	7.2	2.741	1.322	46	46.99
4	7 holes	4.9	2.261	1.089	37	37.79
5	5 holes	2.8	1.709	0.821	26	26.56

Sampler Calibration Relationship

Slope(m):42.461 Intercept(b): -8.558 Correlation Coefficient(r): 0.9992

Checked by: Magnum Fan Date: 28/01/2014

High-Volume TSP Sampler

5-Point Calibration Record

Location	**:**	**Sai Ying Pun**
Calibrated by	**:**	**K.T.Ho**
Date	**:**	**18/01/2014**

Sampler

Model	**:**	**TE-5170**
Serial Number	**:**	**S/N 2146**

Calibration Orfice and Standard Calibration Relationship

Serial Number	**:**	**2454**
Service Date	**:**	**12 Mar 2013**
Slope (m)	**:**	**2.05818**
Intercept (b)	**:**	**0.01929**
Correlation Coefficient(r)	**:**	**0.99991**

Standard Condition

Pstd (hpa)	**:**	**1013**
Tstd (K)	**:**	**298.18**

Calibration Condition

Pa (hpa)	**:**	**1026**
Ta(K)	**:**	**281**

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	10.4	3.343	1.615	58	60.13
2	13 holes	8.6	3.040	1.468	52	53.91
3	10 holes	6.7	2.683	1.294	46	47.69
4	7 holes	4.5	2.199	1.059	37	38.36
5	5 holes	2.6	1.672	0.803	27	28.00

Sampler Calibration Relationship

Slope(m):39.289 Intercept(b): -3.411 Correlation Coefficient(r): 0.9995

Checked by: Magnum Fan Date: 22/01/2014

EQUIPMENT CALIBRATION RECORD

Type :	Laser Dust Monitor
Manufacturer / Brand :	SIBATA
Model No.:	LD-3B
Equipment No.:	LD-3B-002
Sensitivity Adjustment Scale Setting :	622 CPM

Operator:

Standard Equipment

Equipment :	MFC High Volume Air Sampler
Venue :	Wah Ming House, Wah Fu Estate
Model No.:	TE-5170 Total Suspended Particulated
Serial No.:	2100

Last Calibration Date 15/10/2012

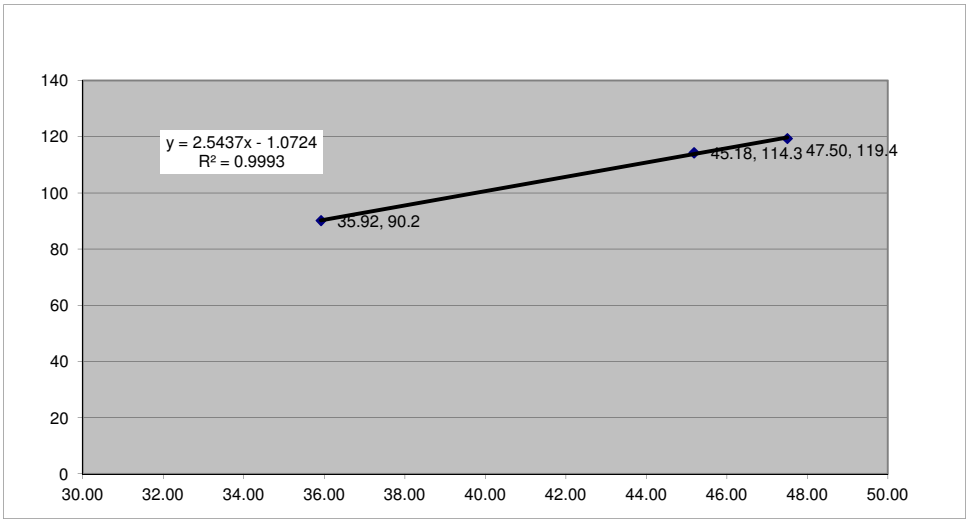
Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration) :	622 CPM
Sensitivity Adjustment Scale Setting (After Calibration) :	622 CPM

Hour	Date (dd-mmm-yy)	Time		Ambient Condition		Concentration (obtained by High Volume Sampler) (ug/m3) Y-axis	Total Count for 60mins (obtained by Laser Dust Monitor)	Count per Minute X-axis
				Temp (C)	R.H. (%)			
1	11-Oct-13	10:32	11:32	26.2	72%	119.4	2850	47.50
2	11-Oct-13	11:03	12:03	26.2	72%	114.3	2711	45.18
3	11-Oct-13	12:50	13:50	26.2	72%	90.2	2155	35.92

Be Linear Regression of Y or X
Slope (K-factor): 2.5437
Correlation coefficient : 0.9993

Remark: _____



Recorded by: Ruby Law Signature: Date: 15/11/2013

Checked by: Keith Chau Signature: Date: 15/11/2013

EQUIPMENT CALIBRATION RECORD

Type :	Laser Dust Monitor
Manufacturer / Brand :	SIBATA
Model No.:	LD-3B
Equipment No.:	LD-3B-001
Sensitivity Adjustment Scale Setting :	640 CPM

Operator:

Standard Equipment

Equipment :	MFC High Volume Air Sampler
Venue :	Wah Ming House, Wah Fu Estate
Model No.:	TE-5170 Total Suspended Particulated
Serial No.:	2099
Last Calibration Date	15/10/2012

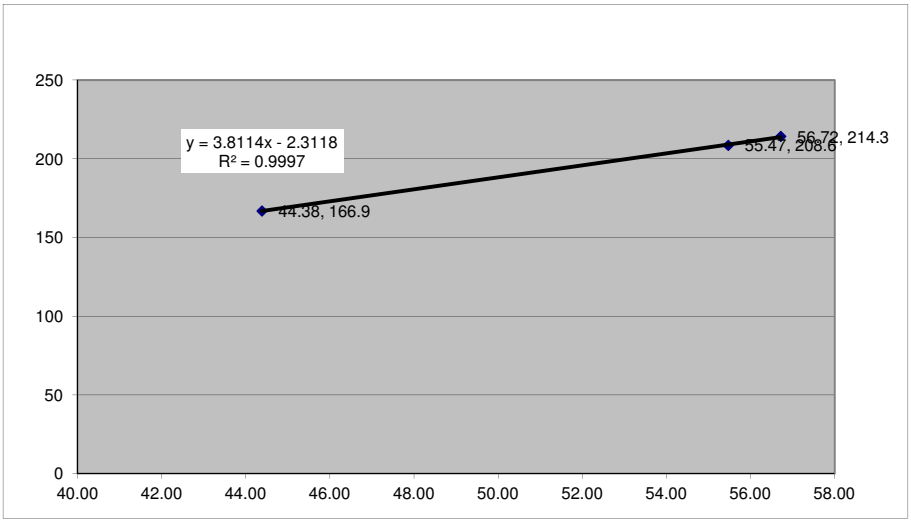
Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration) :	640 CPM
Sensitivity Adjustment Scale Setting (After Calibration) :	640 CPM

Hour	Date (dd-mmm-yy)	Time		Ambient Condition		Concentration (ug/m3) Y-axis	Total Count	Count/Minute X-axis
				Temp (C)	R.H. (%)			
1	11-Oct-13	10:32	11:32	26.2	72%	214.3	3403	56.72
2	11-Oct-13	11:03	12:03	26.2	72%	208.6	3328	55.47
3	11-Oct-13	12:50	13:50	26.2	72%	166.9	2663	44.38

Be Linear Regression of Y or X
Slope (K-factor): 3.8114
Correlation coefficient : 0.9997

Remark:



Recorded by: Ruby Law Signature: Date: 15/11/2013

Checked by: Keith Chau Signature: Date: 15/11/2013

APPENDIX G

MONITORING SCHEDULE FOR THE PRESENT AND NEXT REPORTING PERIOD

Monitoring Schedule during the Reporting Period

Parameter	Monitoring Station	Date
Noise	M3, Normal Daytime[1]	10-Jan-14 ; 16-Jan-14 ; 22-Jan-14 and 28-Jan-14
	M3, Holiday Daytime[1]	05-Jan-14 and 19-Jan-14
	M3, Evening Time[2]	19-Jan-14 ; 23-Jan-14 and 28-Jan-14
	M3, Night-time	23-Jan-14
	M5, Normal Daytime	02-Jan-14 ; 09-Jan-14 ; 13-Jan-14 ; 23-Jan-14 and 28-Jan-14
	M5a, Evening Time	09-Jan-14
	M5a, Night-time	09-Jan-14
	M6a, Normal Daytime	07-Jan-14 ; 14-Jan-14 ; 20-Jan-14 and 28-Jan-14
	M6a, Evening Time	15-Jan-14
	M6a, Night-time	15-Jan-14
	M7a,Normal Daytime	09-Jan-14 ; 14-Jan-14 ; 20-Jan-14 and 29-Jan-14
	M8,Normal Daytime	02-Jan-14 ; 07-Jan-14 ; 13-Jan-14 ; 23-Jan-14 and 29-Jan-14
	M8a, Evening Time	02-Jan-14 and 28-Jan-14
	M8a, Night-time	02-Jan-14 and 28-Jan-14
Air: 1-hr TSP	CM_FM1	03-Jan-14 ; 09-Jan-14 ; 15-Jan-14 ; 21-Jan-14 ; 27-Jan-14 and 30-Jan-14
	CM_CB1a	02-Jan-14 ; 07-Jan-14 ; 13-Jan-14 ; 17-Jan-14 ; 23-Jan-14 and 29-Jan-14
	CM_WF1a	03-Jan-14 ; 09-Jan-14 ; 14-Jan-14 ; 20-Jan-14 ; 24-Jan-14 and 30-Jan-14
	CM_AB1a	02-Jan-14 ; 07-Jan-14 ; 13-Jan-14 ; 17-Jan-14 ; 23-Jan-14 and 29-Jan-14
Air: 24-hrs TSP	CM_FM1	03-Jan-14 ; 09-Jan-14 ; 15-Jan-14 ; 21-Jan-14 ; 27-Jan-14 and 29-Jan-14
	CM_CB1a[3]	03-Jan-14 ; 09-Jan-14 ; 15-Jan-14 ; 21-Jan-14 ; 27-Jan-14 and 29-Jan-14
	CM_WF1a	03-Jan-14 ; 09-Jan-14 ; 15-Jan-14 ; 21-Jan-14 ; 27-Jan-14 and 29-Jan-14
	CM_AB1a	03-Jan-14 ; 09-Jan-14 ; 15-Jan-14 ; 21-Jan-14 ; 27-Jan-14 and 29-Jan-14

Remarks: (1) The data were provided by Contract No. DC/2007/23.
. (2) The data on 19 and 28 Jan 2014 were provided by Contract No. DC/2007/23.
. (3) The HVS was operated less than 24 hours at Cyberport PTW on 3 January 2014

Proposed Monitoring Schedule for Coming Reporting Period

Parameter	Monitoring Station	Date
Noise	M3, Normal Daytime	05-Feb-14 ; 11-Feb-14 ; 17-Feb-14 and 28-Feb-14
	M3, Holiday Daytime	03-Feb-14 and 16-Feb-14
	M3, Evening Time	11-Feb-14 ; 20-Feb-14 25-Feb-14
	M3, Night-time	20-Feb-14
	M5, Normal Daytime	04-Feb-14 ; 10-Feb-14 ; 20-Feb-14 and 26-Feb-14
	M5a, Evening Time	26-Feb-14
	M5a, Night-time	26-Feb-14
	M6a, Normal Daytime	05-Feb-14 ; 13-Feb-14 ; 19-Feb-14 and 25-Feb-14
	M6a, Evening Time	12-Feb-14
	M6a, Night-time	12-Feb-14
	M7a, Normal Daytime	05-Feb-14 ; 13-Feb-14 ; 19-Feb-14 and 25-Feb-14
	M8, Normal Daytime	04-Feb-14 ; 10-Feb-14 ; 20-Feb-14 and 26-Feb-14
	M8a, Night-time	06-Feb-14
	M8a, Evening-time	06-Feb-14
Air: 1-hr TSP	CM_FM1	05-Feb-14 ; 07-Feb-14 ; 13-Feb-14 ; 19-Feb-14 ; 24-Feb-14 and 28-Feb-14
	CM_CB1a	04-Feb-14 ; 10-Feb-14 ; 14-Feb-14 ; 20-Feb-14 and 26-Feb-14
	CM_WF1a	05-Feb-14 ; 07-Feb-14 ; 13-Feb-14 ; 19-Feb-14 and 25-Feb-14
	CM_AB1a	04-Feb-14 ; 10-Feb-14 ; 14-Feb-14 ; 20-Feb-14 and 26-Feb-14
Air: 24-hrs TSP	CM_FM1	04-Feb-14 ; 07-Feb-14 ; 13-Feb-14 ; 19-Feb-14 ; 24-Feb-14 and 28-Feb-14
	CM_CB1a	04-Feb-14 ; 10-Feb-14 ; 14-Feb-14 ; 20-Feb-14 and 26-Feb-14
	CM_WF1a	04-Feb-14 ; 10-Feb-14 ; 14-Feb-14 ; 20-Feb-14 and 26-Feb-14
	CM_AB1a	04-Feb-14 ; 10-Feb-14 ; 14-Feb-14 ; 20-Feb-14 and 26-Feb-14

APPENDIX H

NOISE MONITORING RESULT

Daytime Noise Monitoring Results -- Normal weekday

Station M3, Kwan Yick building(*)

Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
10-Jan-14	08:22	08:52	Fine	67	67	66	-	Traffic Noise	-	18.0	0.5	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
16-Jan-14	13:05	13:35	Sunny	68	69	66	-	Traffic Noise	-	17.0	1.0	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
22-Jan-14	13:00	13:30	Sunny	68	69	66	-	Traffic Noise	-	17.0	0.5	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
28-Jan-14	09:20	09:50	Sunny	68	69	66	-	Traffic Noise	-	20.0	0.5	RION-NL31 (S/N 00410224)	RION-NL73 (S/N 10997142)
			Min.	**67**									
			Max.	**68**									

Remark: (*): The data were provided by Contract No. DC/2007/23. Calibration certificates for the noise meter(s) and calibrator(s) used were included in the corresponding Monthly EM&A Report for this Contract

Station M5, Chuk Lam Ming Tong

Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
02-Jan-14	13:18	13:48	Fine	65	68	61	Tunnel Works	Road traffic noise	N.A	16.8	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
09-Jan-14	10:43	11:13	Fine	66	69	62	Tunnel Works	Road traffic noise	N.A	15.5	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
13-Jan-14	13:54	14:24	Fine	68	70	63	Concrete loading and welding	Road traffic noise	N.A	13.9	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
23-Jan-14	13:25	13:55	Fine	64	66	61	Concrete loading	Road traffic noise	N.A	13.3	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
28-Jan-14	13:00	13:30	Fine	63	65	59	Concrete loading	Road traffic noise	N.A	17.0	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
			Min.	**63**									
			Max.	**68**									

Station M6a, Aegean Terrace

Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq *	L10	L90							
07-Jan-14	15:17	15:47	Fine	51	54	46	Tunnel works	N.A	Free-field measurement, +3dB correction.	17.8	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
14-Jan-14	10:36	11:06	Fine	53	55	48	Tunnel works	N.A	Free-field measurement, +3dB correction.	13.2	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
20-Jan-14	16:17	16:47	Fine	57	58	54	Lining works	N.A	Free-field measurement, +3dB correction.	16.4	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
28-Jan-14	14:20	14:50	Fine	55	56	51	Lining works	N.A	Free-field measurement, +3dB correction.	17.0	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
			Min.	**51**									
			Max.	**57**									

Remark(*): Free-field measurement, +3dB correction.

Station M7a, Wah Ming House

Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
09-Jan-14	09:21	09:51	Fine	64	65	59	N.A	N.A	N.A	15.5	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
14-Jan-14	09:24	09:54	Fine	70	74	65	N.A	Drilling in the adjacent work site	N.A	15.5	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
20-Jan-14	15:18	15:48	Fine	70	74	62	N.A	Drilling in the adjacent work site	N.A	16.4	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
29-Jan-14	14:55	15:25	Fine	62	63	60	N.A	N.A	N.A	17.8	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
			Min.	**62**									
			Max.	**70**									

Station M8, Wah Lai House

Date	Start Time	End Time	Weather	Noise level (dB(A)), 30 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
02-Jan-14	09:29	09:59	Cloudy	66	67	64	loading concrete	Road Traffic noise from Shek Pai Wan Road	N.A	16.8	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
07-Jan-14	13:56	14:26	Fine	67	68	64	loading concrete	Road Traffic noise from Shek Pai Wan Road	N.A	17.8	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
13-Jan-14	09:37	10:07	Fine	67	68	64	loading concrete	Road Traffic noise from Shek Pai Wan Road	N.A	13.9	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
23-Jan-14	09:38	10:08	Fine	68	69	66	loading concrete	Road Traffic noise from Shek Pai Wan Road	N.A	13.3	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
29-Jan-14	13:55	10:08	Fine	66	68	64	loading concrete	Road Traffic noise from Shek Pai Wan Road	N.A	17.8	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
			Min.	**66**									
			Max.	**68**									

Restricted Hours Noise Monitoring Results -- Evening Time and Daytime on Public Holiday

Station M3, Kwan Yick building

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
05-Jan-14	13:17	13:32	Sunny	66	68	64	No major construction works	Traffic noise	-	17.0	0.5	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
19-Jan-14	16:08	16:23	Sunny	66	68	64	No major construction works	Traffic noise	-	15.0	0.5	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
			Min.	**66**									
			Max.	**66**									

Remark: The data was provided by Contract No. DC/2007/23. Calibration certificates for the noise meter(s) and calibrator(s) used were included in the corresponding Monthly EM&A Report for this Contract.

Restricted Hours Noise Monitoring Results -- Evening time

Station M3, Kwan Yick building

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
19-Jan-14	16:08	16:23	Sunny	66	68	64	-	Traffic noise	-	15.0	0.5	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
23-Jan-14	22:45	23:00	Fine	68	69	65	-	0	-	13.3	<5	B&K 2238 S/N : 2800932	B&K 4231 S/N: 3003246
28-Jan-14	20:48	21:03	Fine	66	68	64	-	Traffic noise	-	18.0	0.5	RION- NL31 (S/N 00410224)	RION - NC73 (S/N 10997142)
			Max.	**68**									

Remark: The data (M3_Evening Time) of 8 and 22 October were provided by Contract No. DC/2007/23. Calibration certificates for the noise meter(s) and calibrator(s) used were included in the corresponding Monthly EM&A Report for this Contract

Station M5a, Chuk Lam Ming Tong

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
09-Jan-14	22:45	23:00	Fine	59	60	49	Works in tunnel	Road traffic at San Wan Drive	According to contractor, general construction works was in process accordance to CNP.	15.5	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
			Min.	59									
			Max.	59									

Station M6a, Aegean Terrace

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
15-Jan-14	22:45	23:00	Fine	51	54	46	Works inside tunnel	Local traffics of Aegean Terence	According to contractor, general construction works was in process accordance to CNP. Free-field measurement, +3dB correction.	13.2	<5	B&K 2238 S/N : 2800932	B&K 4231 S/N: 3003246
			Min.	51									
			Max.	51									

Station M8a, Near security room of Wah Lai House

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
02-Jan-14	22:45	23:00	Fine	62	66	56	Tunnel works	Road Traffic noise from Shek Pai Wan Road and cars from residents of Wah Lai House	Major noise source - - road traffic noise.	16.8	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
28-Jan-14	22:45	23:00	Fine	62	64	56	Tunnel works	Road Traffic noise from Shek Pai Wan Road and cars from residents of Wah Lai House	Major noise source - - road traffic noise.	17.0	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
			Min.	62									
			Max.	62									

Restricted Hours Noise Monitoring Results -- Night time

Station M3, Kwan Yick Building

Date	Start Time	End Time	Weather	Noise level (dB(A)), 15 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
23-Jan-14	23:00	23:15	Fine	67	68	65	No outdoor construction noise	Mainly traffic noise	-	13.3	<5	B&K 2238 S/N : 2800932	B&K 4231 S/N: 3003246
			Min.	67									
			Max.	67									

Station M5a, Chuk Lam Ming Tong

Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
09-Jan-14	23:00	23:15	Fine	63	65	49	No major construction workd on surface	Traffic noise at San Wan Drive	N.A	15.5	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
			Min.	63									
			Max.	63									

Station M6a, Aegean Terrace

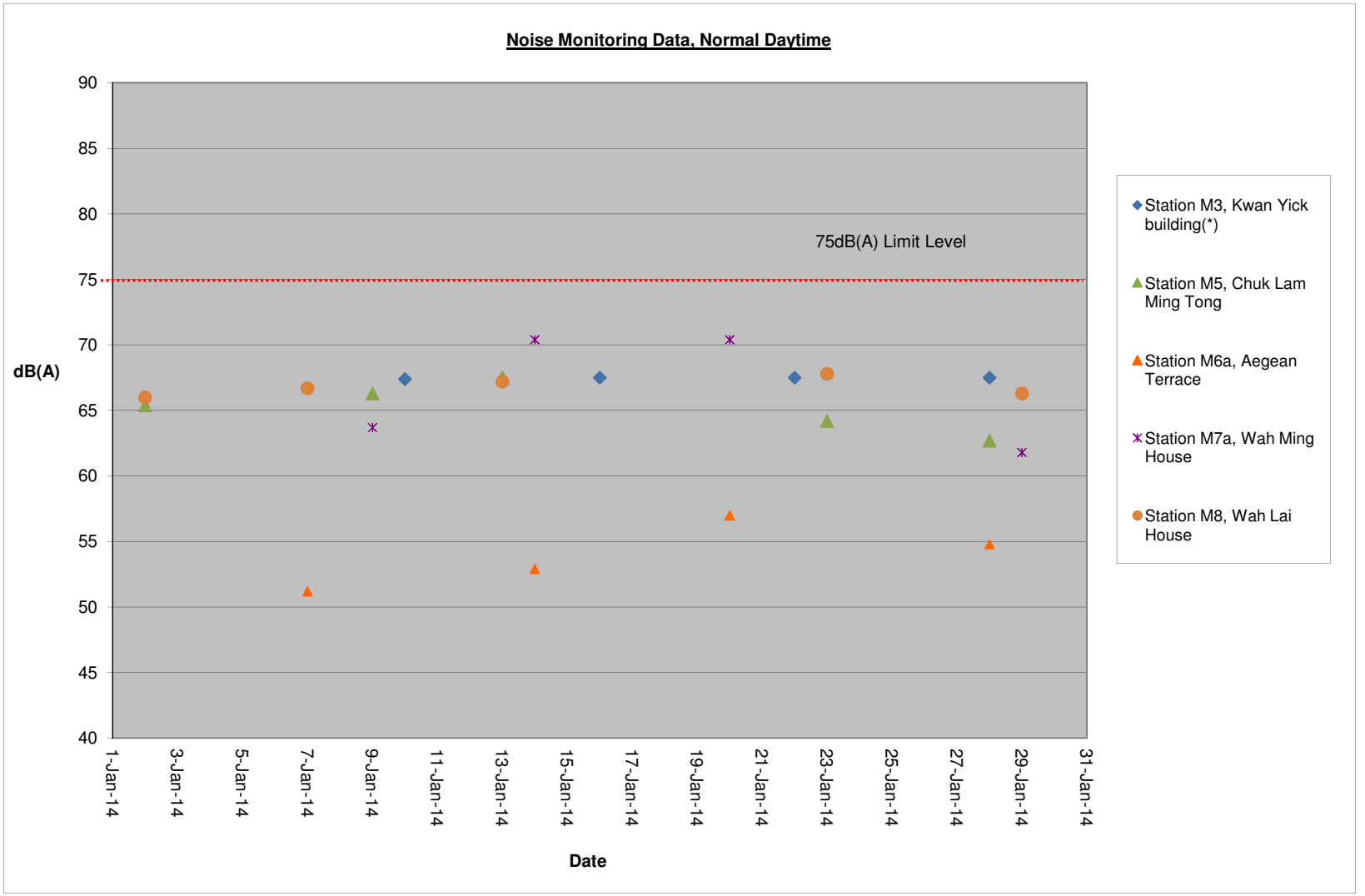
Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s) Observed	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
15-Jan-14	23:00	23:15	Fine	50	52	47	Works inside tunnel	Local traffic of Aegean Terence	According to contractor, general construction works was in process accordance to CNP. Free-field measurement, +3dB correction.	13.2	<5	B&K 2238 S/N : 2800932	B&K 4231 S/N: 3003246
			Min.	50									
			Max.	50									

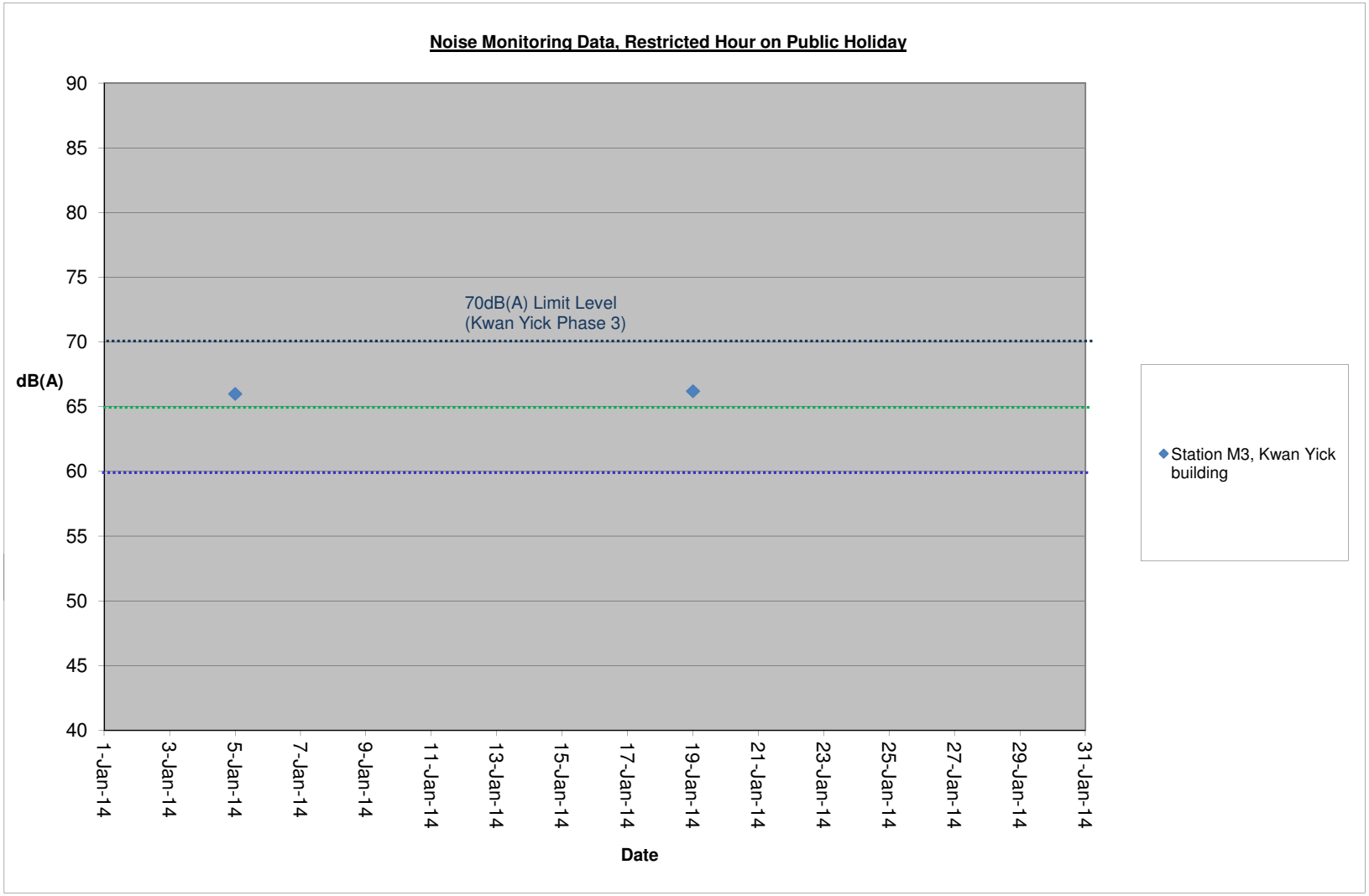
Station M8a, Near security room of Wah Lai House

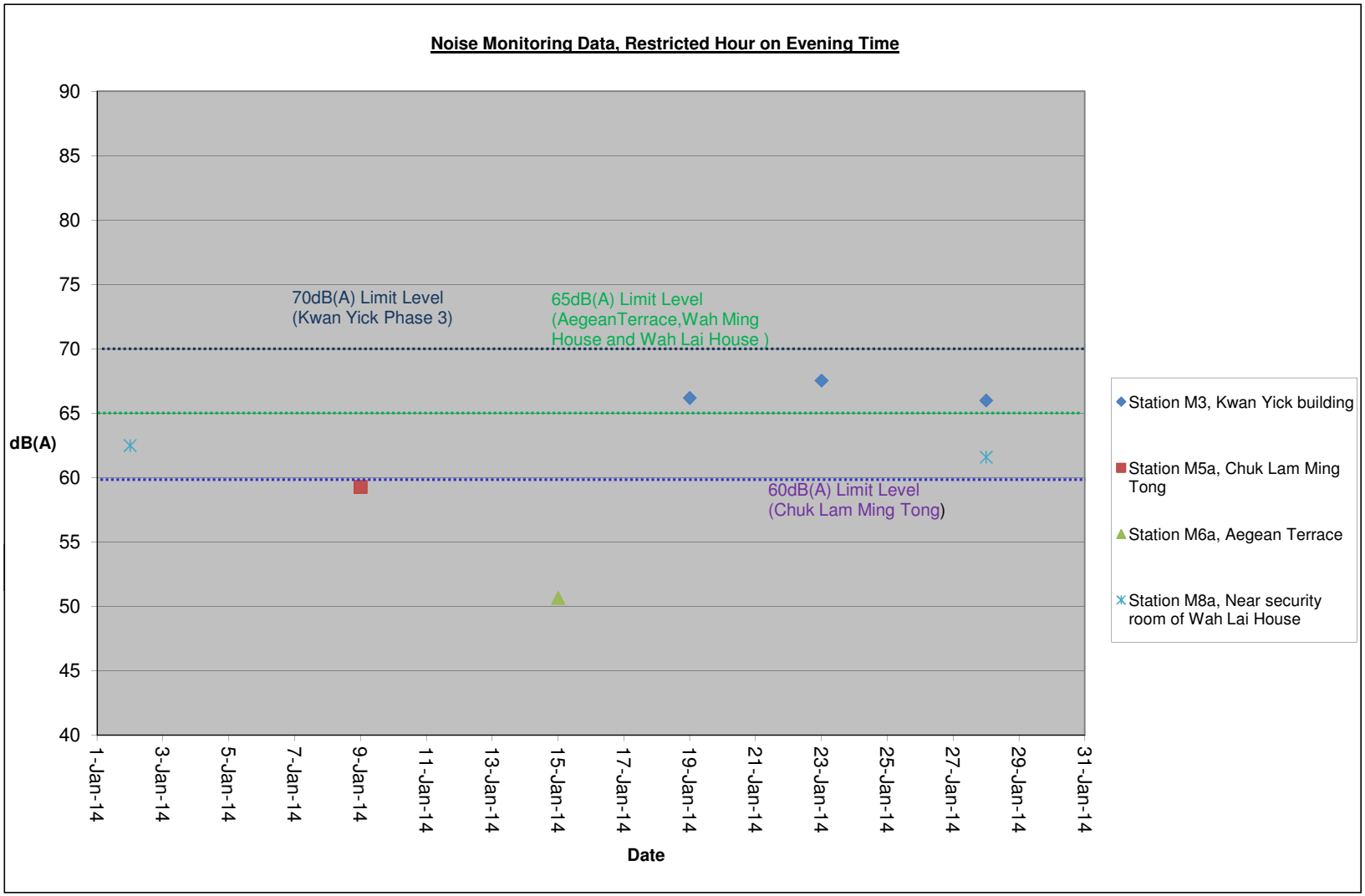
Date	Start Time	End Time	Weather	Noise level (dB(A)), 5 min			Major Construction Noise Source(s)	Other Noise Source(s) Observed	Remarks	Temp. (℃)	Wind Speed (m/s)	Noise Meter Model / ID	Calibrator Model / ID
				Leq	L10	L90							
02-Jan-14	23:00	23:15	Fine	60	63	55	Tunnel worls	Road Traffic noise from Shek Pai Wan Road and cars from residents of Wah Lai House	Major noise source - - road traffic noise.	29.7	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
28-Jan-14	23:00	23:15	Fine	61	64	57	Tunnel worls	Road Traffic noise from Shek Pai Wan Road and cars from residents of Wah Lai House	Major noise source - - road traffic noise.	17.0	<5	B&K 2238 S/N : 2684503	B&K 4231 S/N: 3004068
			Min.	60									
			Max.	61									

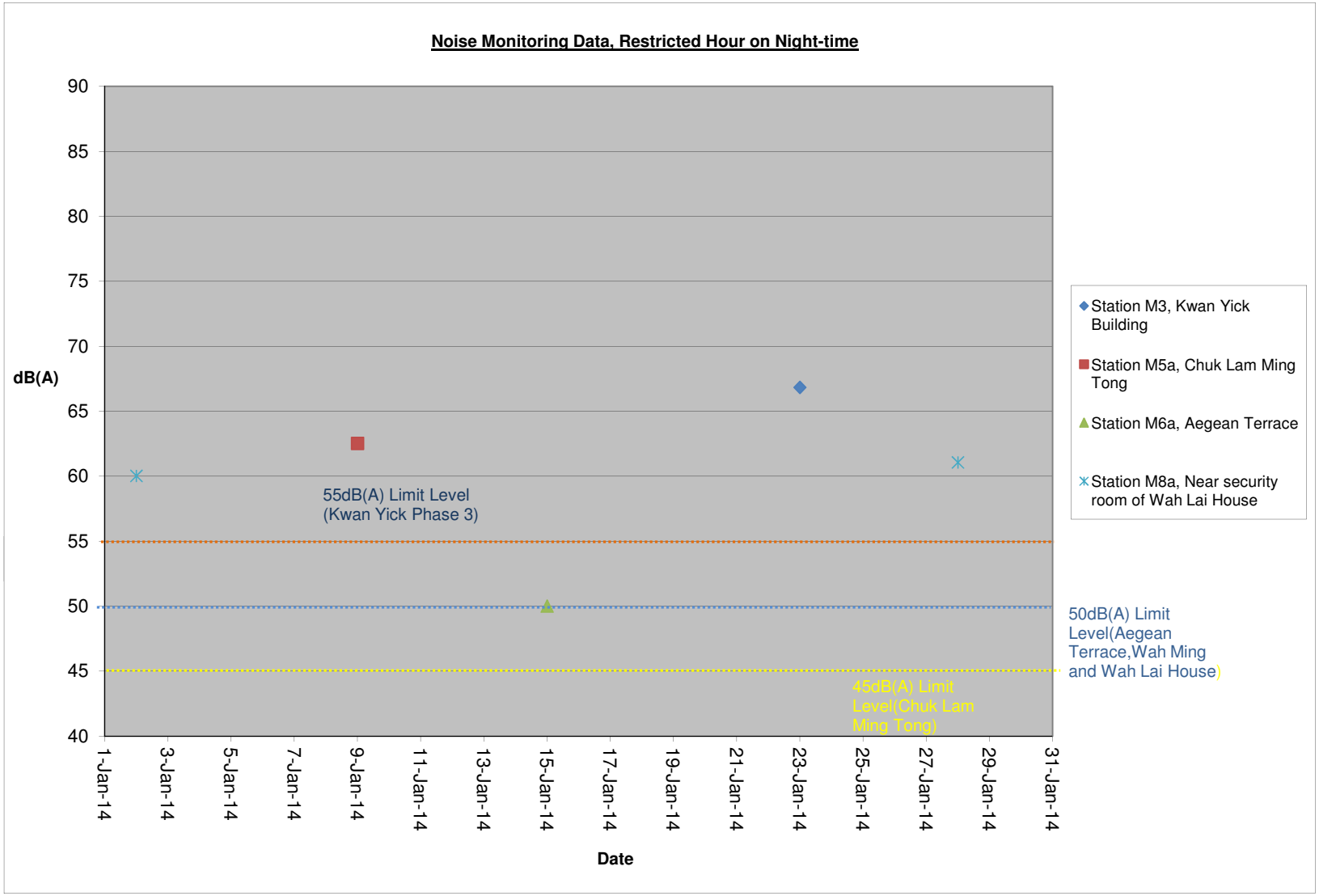
APPENDIX I

GRAPHICAL PRESENTATION OF NOISE MONITORING DATA


Noise Monitoring Data, Normal Daytime
90
85
80
75
70
65
60
55
50
45
40
dB(A)
75dB(A) Limit Level
1-Jan-14
3-Jan-14
5-Jan-14
7-Jan-14
9-Jan-14
11-Jan-14
13-Jan-14
15-Jan-14
17-Jan-14
19-Jan-14
21-Jan-14
23-Jan-14
25-Jan-14
27-Jan-14
29-Jan-14
31-Jan-14
Date
Station M3, Kwan Yick building(*)
Station M5, Chuk Lam Ming Tong
Station M6a, Aegean Terrace
Station M7a, Wah Ming House
Station M8, Wah Lai House


Noise Monitoring Data, Restricted Hour on Public Holiday
90
85
80
75
70
65
60
55
50
45
40
dB(A)
70dB(A) Limit Level
(Kwan Yick Phase 3)
1-Jan-14
3-Jan-14
5-Jan-14
7-Jan-14
9-Jan-14
11-Jan-14
13-Jan-14
15-Jan-14
17-Jan-14
19-Jan-14
21-Jan-14
23-Jan-14
25-Jan-14
27-Jan-14
29-Jan-14
31-Jan-14
Date
Station M3, Kwan Yick building


Noise Monitoring Data, Restricted Hour on Evening Time
90
85
80
75
70
65
60
55
50
45
40
dB(A)
70dB(A) Limit Level
(Kwan Yick Phase 3)
65dB(A) Limit Level
(AegeanTerrace,Wah Ming
House and Wah Lai House)
60dB(A) Limit Level
(Chuk Lam Ming Tong)
1-Jan-14
3-Jan-14
5-Jan-14
7-Jan-14
9-Jan-14
11-Jan-14
13-Jan-14
15-Jan-14
17-Jan-14
19-Jan-14
21-Jan-14
23-Jan-14
25-Jan-14
27-Jan-14
29-Jan-14
31-Jan-14
Date
Station M3, Kwan Yick building
Station M5a, Chuk Lam Ming Tong
Station M6a, Aegean Terrace
Station M8a, Near security room of Wah Lai House


Noise Monitoring Data, Restricted Hour on Night-time
dB(A)
90
85
80
75
70
65
60
55
50
45
40
1-Jan-14
3-Jan-14
5-Jan-14
7-Jan-14
9-Jan-14
11-Jan-14
13-Jan-14
15-Jan-14
17-Jan-14
19-Jan-14
21-Jan-14
23-Jan-14
25-Jan-14
27-Jan-14
29-Jan-14
31-Jan-14
Date
55dB(A) Limit Level (Kwan Yick Phase 3)
50dB(A) Limit Level(Aegean Terrace,Wah Ming and Wah Lai House)
45dB(A) Limit Level(Chuk Lam Ming Tong)
Station M3, Kwan Yick Building
Station M5a, Chuk Lam Ming Tong
Station M6a, Aegean Terrace
Station M8a, Near security room of Wah Lai House

APPENDIX J

AIR QUALITY MONITORING RESULT

1-hour TSP Monitoring Results

Station CM_FM1, Western Wholesale Food Market

Date	Start Time	Finish Time	Weather	TSP Concentration ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Site Conditions / Observations / Remarks	Temperature (℃)	Wind Speed (m/s)	Sampler ID	Filter ID
03-Jan-14	08:00	09:00	Fine	186.2	331.9	500	Loading concrete and operation of crane truck	19.8	<5	Western Wholesale Food Market	1766
03-Jan-14	10:06	11:06	Fine	183.8	331.9	500	Loading concrete and operation of crane truck	19.8	<5	Western Wholesale Food Market	1767
03-Jan-14	11:10	12:10	Fine	165.1	331.9	500	Loading concrete and operation of crane truck	19.8	<5	Western Wholesale Food Market	1768
09-Jan-14	13:36	14:36	Fine	115.7	331.9	500	Loading concrete and operation of dump truck	15.5	<5	Western Wholesale Food Market	1773
09-Jan-14	14:43	15:43	Fine	138.0	331.9	500	Loading concrete and operation of dump truck	15.5	<5	Western Wholesale Food Market	1774
09-Jan-14	15:55	16:55	Fine	160.3	331.9	500	Loading concrete and operation of dump truck	15.5	<5	Western Wholesale Food Market	1775
15-Jan-14	13:07	14:07	Fine	90.2	331.9	500	Loading concrete	13.2	<5	Western Wholesale Food Market	1780
15-Jan-14	14:15	15:15	Fine	137.3	331.9	500	Loading concrete	13.2	<5	Western Wholesale Food Market	1781
15-Jan-14	15:30	16:30	Fine	159.5	331.9	500	Loading concrete	13.2	<5	Western Wholesale Food Market	1782
21-Jan-14	08:00	09:00	Fine	170.0	331.9	500	Loading concrete	14.9	<5	Western Wholesale Food Market	1787
21-Jan-14	13:10	14:10	Fine	121.2	331.9	500	Loading concrete	14.9	<5	Western Wholesale Food Market	1788
21-Jan-14	14:22	15:22	Fine	143.4	331.9	500	Loading concrete	14.9	<5	Western Wholesale Food Market	1789
27-Jan-14	08:00	09:00	Fine	264.6	331.9	500	Loading concrete	16.4	<5	Western Wholesale Food Market	1794
27-Jan-14	14:00	15:00	Fine	112.0	331.9	500	Loading concrete	16.4	<5	Western Wholesale Food Market	1795
27-Jan-14	15:06	16:06	Fine	114.6	331.9	500	Loading concrete	16.4	<5	Western Wholesale Food Market	1796
30-Jan-14	10:55	11:55	Fine	130.9	331.9	500	Loading concrete	18.9	<5	Western Wholesale Food Market	1801

30-Jan-14	12:00	13:00	Fine	110.9	331.9	500	Loading concrete	18.9	<5	Western Wholesale Food Market	1802
30-Jan-14	13:06	14:06	Fine	239.1	331.9	500	Loading concrete	18.9	<5	Western Wholesale Food Market	1803
			Min.	**90.2**							
			Max.	**264.6**							
			Average	**152**							

Station CM_CB1a, The Arcade, Cyberport

Date	Start Time	Finish Time	Weather	TSP Concentration (μg/m³)	Action Level (μg/m³)	Limit Level (μg/m³)	Site Conditions / Observations / Remarks	Temperature (℃)	Wind Speed (m/s)	Sampler ID	Filter ID
02-Jan-14	13:00	14:00	Fine	199.7	279.9	500	Tunnel works	16.8	<5	LD-3B-002	N/A
02-Jan-14	14:00	15:00	Fine	162.8	279.9	500	Tunnel works	16.8	<5	LD-3B-002	N/A
02-Jan-14	15:00	16:00	Fine	171.7	279.9	500	Tunnel works	16.8	<5	LD-3B-002	N/A
07-Jan-14	13:00	14:00	Fine	115.7	279.9	500	Tunnel works	16.8	<5	LD-3B-002	N/A
07-Jan-14	14:00	15:00	Fine	143.7	279.9	500	Tunnel works	16.8	<5	LD-3B-002	N/A
07-Jan-14	15:00	16:00	Fine	170.4	279.9	500	Tunnel works	16.8	<5	LD-3B-002	N/A
13-Jan-14	13:35	14:35	Fine	188.2	279.9	500	Concrete loading	13.9	<5	LD-3B-002	N/A
13-Jan-14	14:35	15:35	Fine	179.3	279.9	500	Concrete loading	13.9	<5	LD-3B-002	N/A
13-Jan-14	15:35	16:35	Fine	179.3	279.9	500	Concrete loading	13.9	<5	LD-3B-002	N/A
17-Jan-14	09:09	10:09	Fine	178.1	279.9	500	Concrete loading	15.5	<5	LD-3B-002	N/A
17-Jan-14	10:09	11:09	Fine	184.4	279.9	500	Concrete loading	15.5	<5	LD-3B-002	N/A
17-Jan-14	11:09	12:09	Fine	192.0	279.9	500	Concrete loading	15.5	<5	LD-3B-002	N/A
23-Jan-14	13:07	14:07	Fine	138.6	279.9	500	Concrete loading	13.3	<5	LD-3B-002	N/A
23-Jan-14	14:07	15:07	Fine	104.3	279.9	500	Concrete loading	13.3	<5	LD-3B-002	N/A
23-Jan-14	15:07	16:07	Fine	100.5	279.9	500	Concrete loading	13.3	<5	LD-3B-002	N/A
29-Jan-14	09:08	10:08	Sunny	61.0	279.9	500	Concrete loading	17.8	<5	LD-3B-002	N/A
29-Jan-14	10:08	11:08	Fine	59.8	279.9	500	Concrete loading	17.8	<5	LD-3B-002	N/A
29-Jan-14	11:08	12:08	Fine	62.3	279.9	500	Concrete loading	17.8	<5	LD-3B-002	N/A
			Min.	**59.8**							
			Max.	**199.7**							
			Average	**144**							

Station CM_WF1a, The Wah Ming House

Date	Start Time	Finish Time	Weather	TSP Concentration ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Site Conditions / Observations / Remarks	Temperature (℃)	Wind Speed (m/s)	Sampler ID	Filter ID
03-Jan-14	09:20	10:20	Fine	240.1	284.5	500	Operation of mobile crane	19.8	<5	LD-3B-001	N/A
03-Jan-14	10:20	11:20	Fine	243.9	284.5	500	Operation of mobile crane	19.8	<5	LD-3B-001	N/A
03-Jan-14	11:20	12:20	Fine	280.1	284.5	500	Operation of mobile crane	19.8	<5	LD-3B-001	N/A
09-Jan-14	09:17	10:17	Fine	272.5	284.5	500	Operation of mobile crane	15.5	<5	LD-3B-001	N/A
09-Jan-14	10:17	11:17	Fine	283.9	284.5	500	Operation of mobile crane	15.5	<5	LD-3B-001	N/A
09-Jan-14	11:17	12:17	Fine	261.1	284.5	500	Operation of mobile crane	15.5	<5	LD-3B-001	N/A
14-Jan-14	09:26	10:26	Fine	194.4	284.5	500	Operation of mobile crane	13.2	<5	LD-3B-001	N/A
14-Jan-14	10:26	11:26	Fine	192.5	284.5	500	Operation of mobile crane	13.2	<5	LD-3B-001	N/A
14-Jan-14	11:26	12:26	Fine	186.8	284.5	500	Operation of mobile crane	13.2	<5	LD-3B-001	N/A
20-Jan-14	14:26	15:26	Fine	276.3	284.5	500	No major construction works	16.4	<5	LD-3B-001	N/A
20-Jan-14	15:26	16:26	Fine	270.6	284.5	500	No major construction works	16.4	<5	LD-3B-001	N/A
20-Jan-14	16:26	17:26	Fine	282.0	284.5	500	No major construction works	16.4	<5	LD-3B-001	N/A
24-Jan-14	09:17	10:17	Fine	125.8	284.5	500	No major construction works	15.6	<5	LD-3B-001	N/A
24-Jan-14	10:17	11:17	Fine	127.7	284.5	500	No major construction works	15.6	<5	LD-3B-001	N/A
24-Jan-14	11:17	12:17	Fine	110.5	284.5	500	No major construction works	15.6	<5	LD-3B-001	N/A
30-Jan-14	09:22	10:22	Fine	219.2	284.5	500	No major construction works	18.9	<5	LD-3B-001	N/A
30-Jan-14	10:22	11:22	Fine	154.4	284.5	500	No major construction works	18.9	<5	LD-3B-001	N/A
30-Jan-14	11:22	12:22	Fine	171.5	284.5	500	No major construction works	18.9	<5	LD-3B-001	N/A
			Min.	**110.5**							
			Max.	**283.9**							
			Average	**216**							

Station CM_AB1a, The Hong Kong Ice and Cold Storage (Aberdeen)

Date	Start Time	Finish Time	Weather	TSP Concentration ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Site Conditions / Observations / Remarks	Temperature (℃)	Wind Speed (m/s)	Sampler ID	Filter ID
02-Jan-14	09:06	10:06	Fine	262.0	282.5	500	Operation of moblie crane and loading	16.8	<5	LD-3B-002	N/A
02-Jan-14	10:06	11:06	Fine	223.8	282.5	500	Operation of moblie crane and loading	16.8	<5	LD-3B-002	N/A
02-Jan-14	11:06	12:06	Fine	218.8	282.5	500	Operation of moblie crane and loading	16.8	<5	LD-3B-002	N/A
07-Jan-14	13:10	14:10	Fine	248.0	282.5	500	Operation of moblie crane and loading	17.8	<5	LD-3B-002	N/A
07-Jan-14	14:10	15:10	Fine	273.4	282.5	500	Operation of moblie crane and loading	17.8	<5	LD-3B-002	N/A
07-Jan-14	15:10	16:10	Fine	223.8	282.5	500	Operation of moblie crane and loading	17.8	<5	LD-3B-002	N/A
13-Jan-14	09:36	10:36	Fine	137.4	282.5	500	Operation of moblie crane and loading	13.9	<5	LD-3B-002	N/A
13-Jan-14	10:36	11:36	Fine	139.9	282.5	500	Operation of moblie crane and loading	13.9	<5	LD-3B-002	N/A
13-Jan-14	11:36	12:36	Fine	166.6	282.5	500	Operation of moblie crane and loading	13.9	<5	LD-3B-002	N/A
17-Jan-14	13:14	14:14	Fine	206.0	282.5	500	Operation of moblie crane and loading	15.5	<5	LD-3B-002	N/A
17-Jan-14	14:14	15:14	Fine	221.3	282.5	500	Operation of moblie crane and loading	15.5	<5	LD-3B-002	N/A
17-Jan-14	15:14	16:14	Fine	207.3	282.5	500	Operation of moblie crane and loading	15.5	<5	LD-3B-002	N/A
23-Jan-14	09:18	10:18	Fine	155.2	282.5	500	Operation of moblie crane and loading	13.3	<5	LD-3B-002	N/A
23-Jan-14	10:18	11:18	Fine	161.5	282.5	500	Operation of moblie crane and loading	13.3	<5	LD-3B-002	N/A
23-Jan-14	11:18	12:18	Fine	194.6	282.5	500	Operation of moblie crane and loading	13.3	<5	LD-3B-002	N/A
29-Jan-14	13:00	14:00	Fine	61.0	282.5	500	Operation of moblie crane and loading	17.8	<5	LD-3B-002	N/A
29-Jan-14	14:00	15:00	Fine	63.6	282.5	500	Operation of moblie crane and loading	17.8	<5	LD-3B-002	N/A
29-Jan-14	15:00	16:00	Fine	61.0	282.5	500	Operation of moblie crane and loading	17.8	<5	LD-3B-002	N/A
			Min.	**61.0**							
			Max.	**273.4**							
			Average	**179**							

24-hour TSP Monitoring Results

Station CM_FM1, Western Wholesale Food Market

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)			
03-Jan-14	12:30	04-Jan-14	12:30	Fine	2.7915	3.1095	757.22	781.22	24.00	1.2085	1.2085	1.2085	183	188.5	260	Tunnel Works	Western Wholesale Food Market	1759
09-Jan-14	17:02	10-Jan-14	17:02	Fine	2.7689	3.0182	784.21	808.21	24.00	1.2201	1.2201	1.2201	142	188.5	260	Tunnel Works	Western Wholesale Food Market	1776
15-Jan-14	16:43	16-Jan-14	16:43	Fine	2.767	2.9683	811.21	835.21	24.00	1.2257	1.2257	1.2257	114	188.5	260	Tunnel Works	Western Wholesale Food Market	1783
21-Jan-14	15:30	22-Jan-14	15:30	Fine	2.7718	3.1014	838.24	862.24	24.00	1.2325	1.2325	1.2325	186	188.5	260	Tunnel Works	Western Wholesale Food Market	1790
27-Jan-14	16:15	28-Jan-14	16:15	Fine	2.7811	2.9535	865.24	889.24	24.00	1.2796	1.2796	1.2796	94	188.5	260	Tunnel Works	Western Wholesale Food Market	1797
29-Jan-14	10:50	30-Jan-14	10:50	Fine	2.7935	2.8656	889.24	913.24	24.00	1.2759	1.2759	1.2759	39	188.5	260	Tunnel Works	Western Wholesale Food Market	1804
												Min.	**39**					
												Max.	**186**					
												Average	**126**					

Station CM_CB1a, The Arcade, Cyberport

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)			
03-Jan-14	13:38	04-Jan-14	13:38	Fine	The HVS was operated less than 24 hours								N/A	N/A	N/A	N/A	Arcade	1756
09-Jan-14	08:00	10-Jan-14	08:00	Fine	2.797	2.9595	6735.75	6759.75	24.00	0.9788	0.9788	0.9788	115	178.1	260	Loading	Arcade	1770
15-Jan-14	08:00	16-Jan-14	08:00	Fine	2.7503	2.8848	6759.75	6783.75	24.00	0.9833	0.9833	0.9833	95	178.1	260	Loading	Arcade	1778
21-Jan-14	08:00	22-Jan-14	08:00	Fine	2.7581	3.0093	6783.75	6807.75	24.00	0.9804	0.9804	0.9804	178	178.1	260	Loading	Arcade	1784
27-Jan-14	08:00	28-Jan-14	08:00	Fine	2.7722	2.9124	6807.75	6831.75	24.00	0.9769	0.9769	0.9769	100	178.1	260	Loading	Arcade	1792
29-Jan-14	08:00	30-Jan-14	08:00	Fine	2.7771	2.8691	6831.75	6855.75	24.00	0.9743	0.9743	0.9743	66	178.1	260	Loading	Arcade	1798
												Min.	**66**					
												Max.	**178**					
												Average	**111**					

Station CM_WF1a, The Wah Ming House

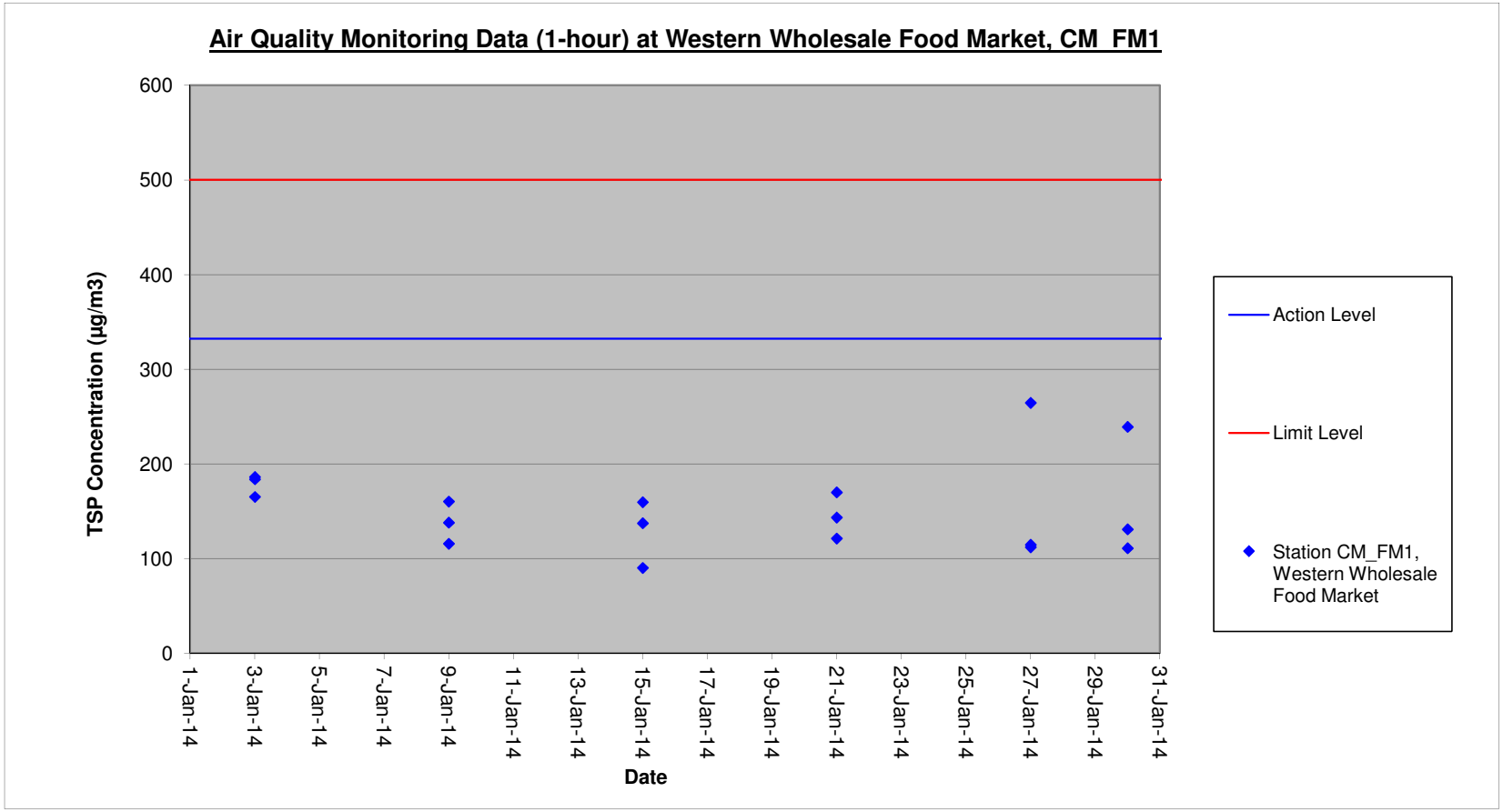
Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m^3/min)			TSP Conc. ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final	Average						
03-Jan-14	13:00	04-Jan-14	13:00	Fine	2.7828	3.0508	6467.90	6491.90	24.00	1.0406	1.0406	1.0406	179	185.3	260	Tunnel works	Wah Fu	1765
09-Jan-14	13:00	10-Jan-14	13:00	Fine	2.7841	2.9442	6491.90	6515.90	24.00	1.0499	1.0499	1.0499	106	185.3	260	Tunnel works	Wah Fu	1772
15-Jan-14	08:00	16-Jan-14	08:00	Fine	2.7465	2.8789	6515.90	6539.90	24.00	1.0544	1.0544	1.0544	87	185.3	260	Tunnel works	Wah Fu	1779
21-Jan-14	08:00	22-Jan-14	08:00	Fine	2.7635	3.0084	6539.89	6563.89	24.00	1.0515	1.0515	1.0515	162	185.3	260	Tunnel works	Wah Fu	1786
27-Jan-14	08:00	28-Jan-14	08:00	Fine	2.7566	2.8974	6563.89	6587.89	24.00	1.0479	1.0479	1.0479	93	185.3	260	Tunnel works	Wah Fu	1793
29-Jan-14	15:00	30-Jan-14	15:00	Fine	2.7924	2.909	6587.89	6611.89	24.00	1.1310	1.1310	1.1310	72	185.3	260	Tunnel works	Wah Fu	1800
												Min.	**72**					
												Max.	**179**					
												Average	**116**					

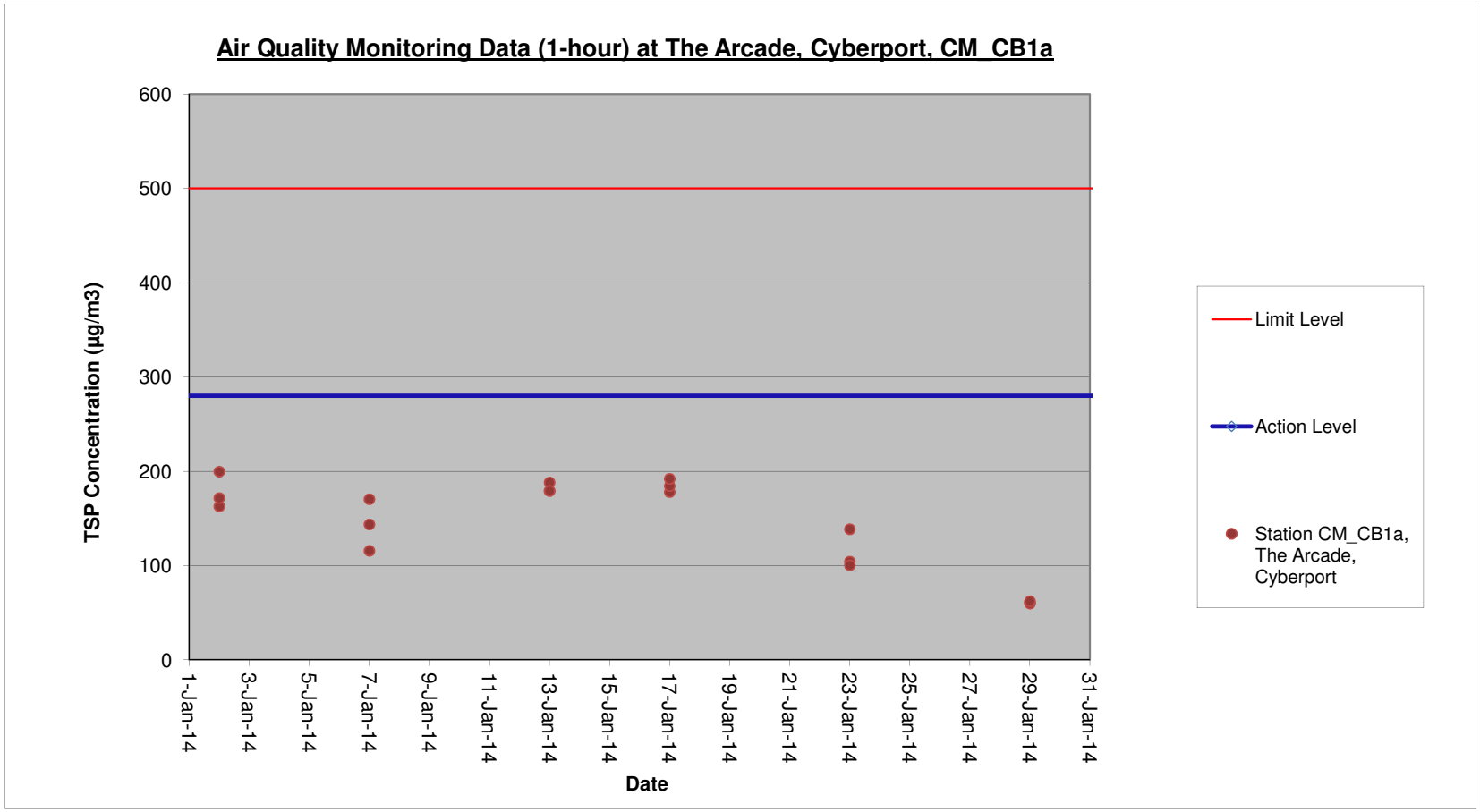
Station CM_AB1a, The Hong Kong Ice and Cold Storage (Aberdeen)

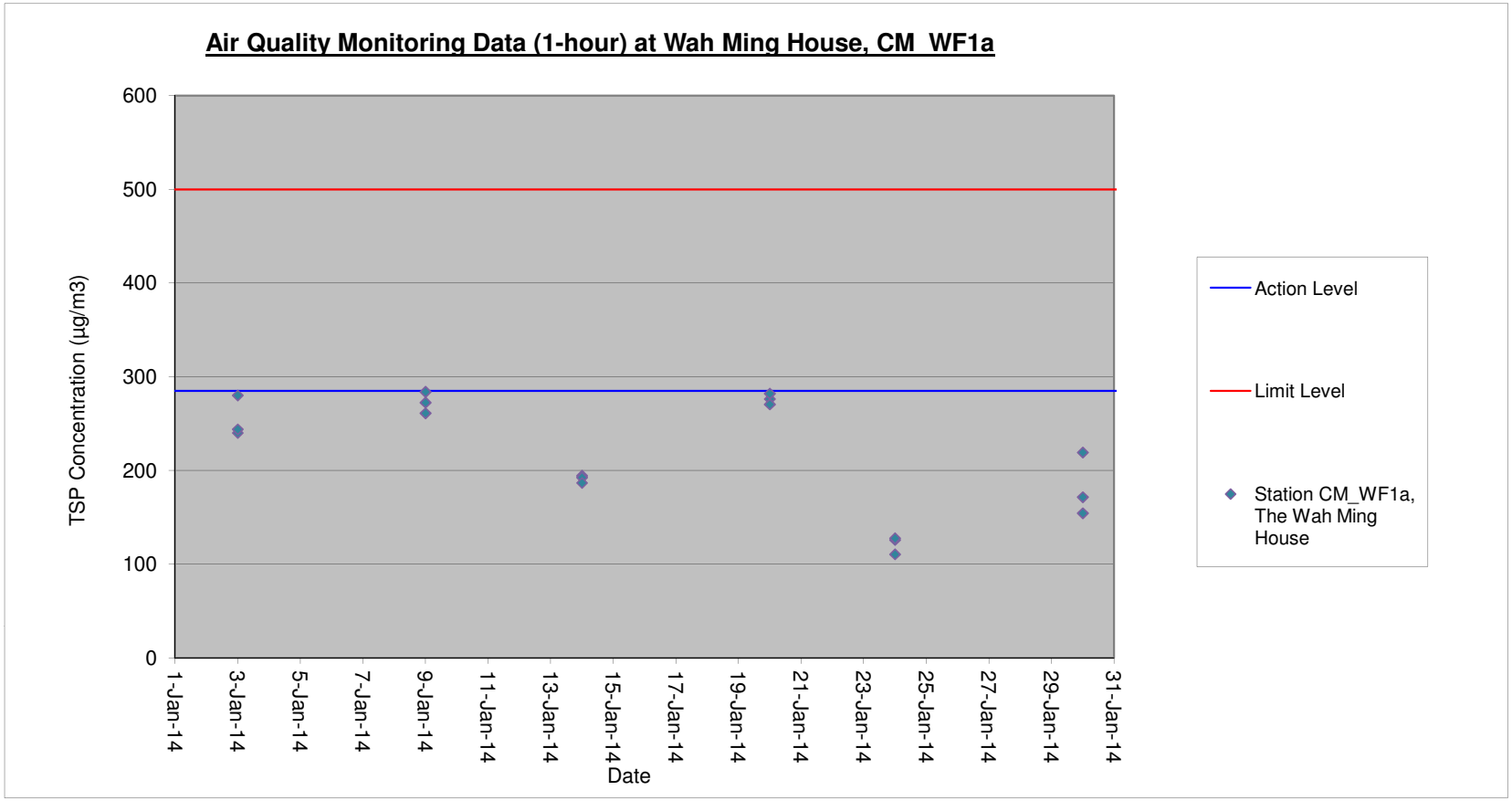
Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time (hrs)	Flow Rate (m^3/min)			TSP Conc. ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Observations / Remarks	Sampler ID	Filter ID
Date	Time	Date	Time		Initial	Final	Initial	Final		Initial	Final	Average						
03-Jan-14	08:00	04-Jan-14	08:00	Fine	2.7997	3.0421	6567.15	6591.15	24.00	1.1183	1.1183	1.1183	151	174.2	260	Tunnel works	Ice Factory	1763
09-Jan-14	08:00	10-Jan-14	08:00	Fine	2.7813	2.9543	6591.15	6615.15	24.00	1.1284	1.1284	1.1284	106	174.2	260	Tunnel works	Ice Factory	1771
15-Jan-14	08:00	16-Jan-14	08:00	Fine	2.7826	2.9349	6615.12	6639.12	24.00	1.1333	1.1333	1.1333	93	174.2	260	Tunnel works	Ice Factory	1777
21-Jan-14	08:00	22-Jan-14	08:00	Fine	2.7633	3.0025	6639.11	6663.11	24.00	1.1301	1.1301	1.1301	147	174.2	260	Tunnel works	Ice Factory	1785
27-Jan-14	08:00	28-Jan-14	08:00	Fine	2.7609	2.9179	6663.12	6687.12	24.00	1.1262	1.1262	1.1262	97	174.2	260	Tunnel works	Ice Factory	1791
29-Jan-14	08:00	30-Jan-14	08:00	Fine	2.7785	2.926	6687.12	6711.12	24.00	1.1233	1.1233	1.1233	91	174.2	260	Tunnel works	Ice Factory	1799
												Min.	**91**					
												Max.	**151**					
												Average	**114**					

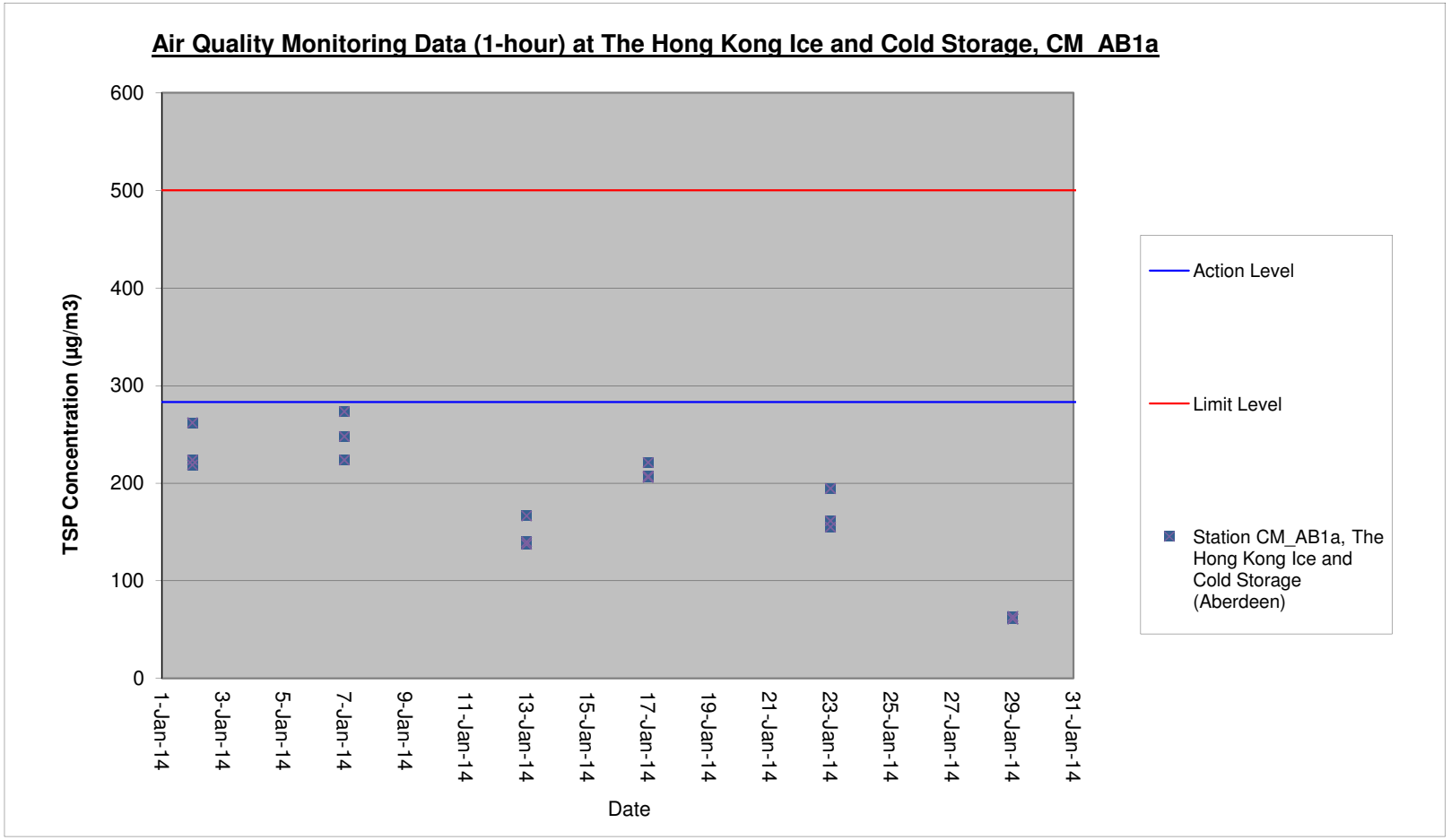
APPENDIX K

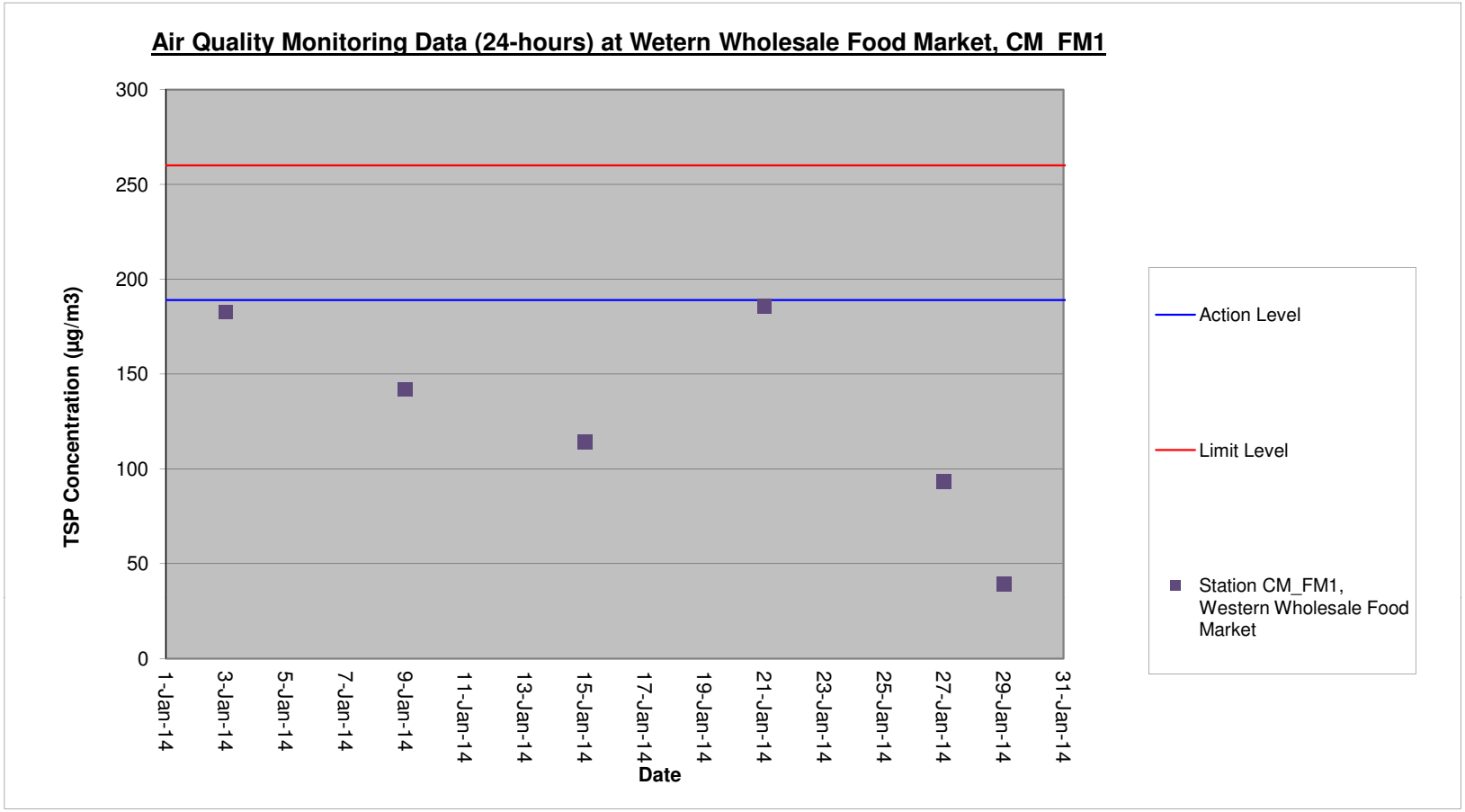
GRAPHICAL PRESENTATION OF AIR QUALITY MONITORING DATA


Air Quality Monitoring Data (1-hour) at Western Wholesale Food Market, CM_FM1
TSP Concentration (µg/m3)
600
500
400
300
200
100
0
1-Jan-14
3-Jan-14
5-Jan-14
7-Jan-14
9-Jan-14
11-Jan-14
13-Jan-14
15-Jan-14
17-Jan-14
19-Jan-14
21-Jan-14
23-Jan-14
25-Jan-14
27-Jan-14
29-Jan-14
31-Jan-14
Date
Action Level
Limit Level
Station CM_FM1, Western Wholesale Food Market


Air Quality Monitoring Data (1-hour) at The Arcade, Cyberport, CM_CB1a
TSP Concentration (µg/m3)
600
500
400
300
200
100
0
1-Jan-14
3-Jan-14
5-Jan-14
7-Jan-14
9-Jan-14
11-Jan-14
13-Jan-14
15-Jan-14
17-Jan-14
19-Jan-14
21-Jan-14
23-Jan-14
25-Jan-14
27-Jan-14
29-Jan-14
31-Jan-14
Date
Limit Level
Action Level
Station CM_CB1a, The Arcade, Cyberport


Air Quality Monitoring Data (1-hour) at Wah Ming House, CM_WF1a
TSP Concentration (µg/m3)
600
500
400
300
200
100
0
1-Jan-14
3-Jan-14
5-Jan-14
7-Jan-14
9-Jan-14
11-Jan-14
13-Jan-14
15-Jan-14
17-Jan-14
19-Jan-14
21-Jan-14
23-Jan-14
25-Jan-14
27-Jan-14
29-Jan-14
31-Jan-14
Date
Action Level
Limit Level
Station CM_WF1a, The Wah Ming House


Air Quality Monitoring Data (1-hour) at The Hong Kong Ice and Cold Storage, CM_AB1a
TSP Concentration (µg/m3)
600
500
400
300
200
100
0
1-Jan-14
3-Jan-14
5-Jan-14
7-Jan-14
9-Jan-14
11-Jan-14
13-Jan-14
15-Jan-14
17-Jan-14
19-Jan-14
21-Jan-14
23-Jan-14
25-Jan-14
27-Jan-14
29-Jan-14
31-Jan-14
Date
Action Level
Limit Level
Station CM_AB1a, The Hong Kong Ice and Cold Storage (Aberdeen)


Air Quality Monitoring Data (24-hours) at Wetern Wholesale Food Market, CM_FM1
TSP Concentration (µg/m3)
300
250
200
150
100
50
0
1-Jan-14
3-Jan-14
5-Jan-14
7-Jan-14
9-Jan-14
11-Jan-14
13-Jan-14
15-Jan-14
17-Jan-14
19-Jan-14
21-Jan-14
23-Jan-14
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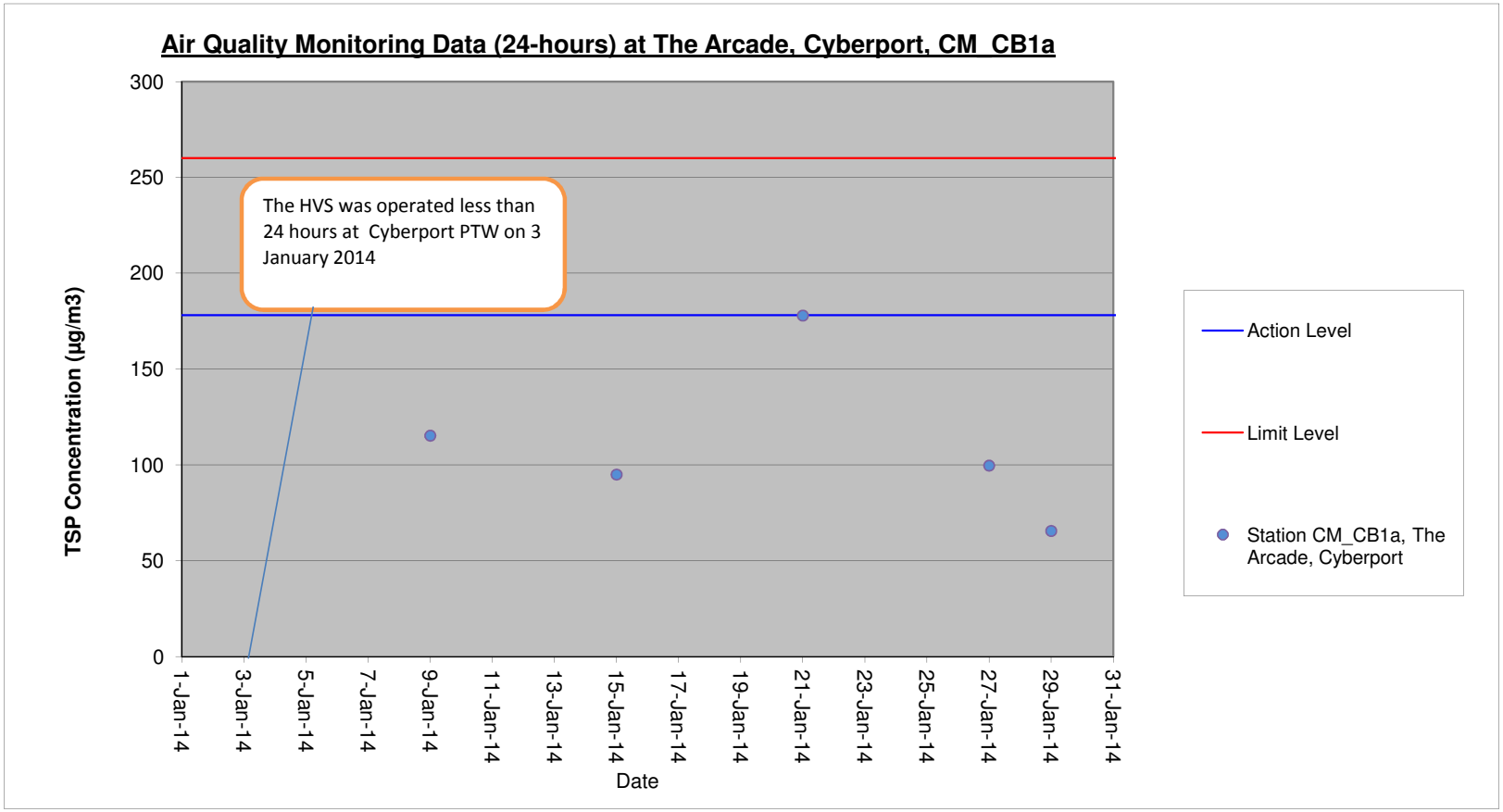
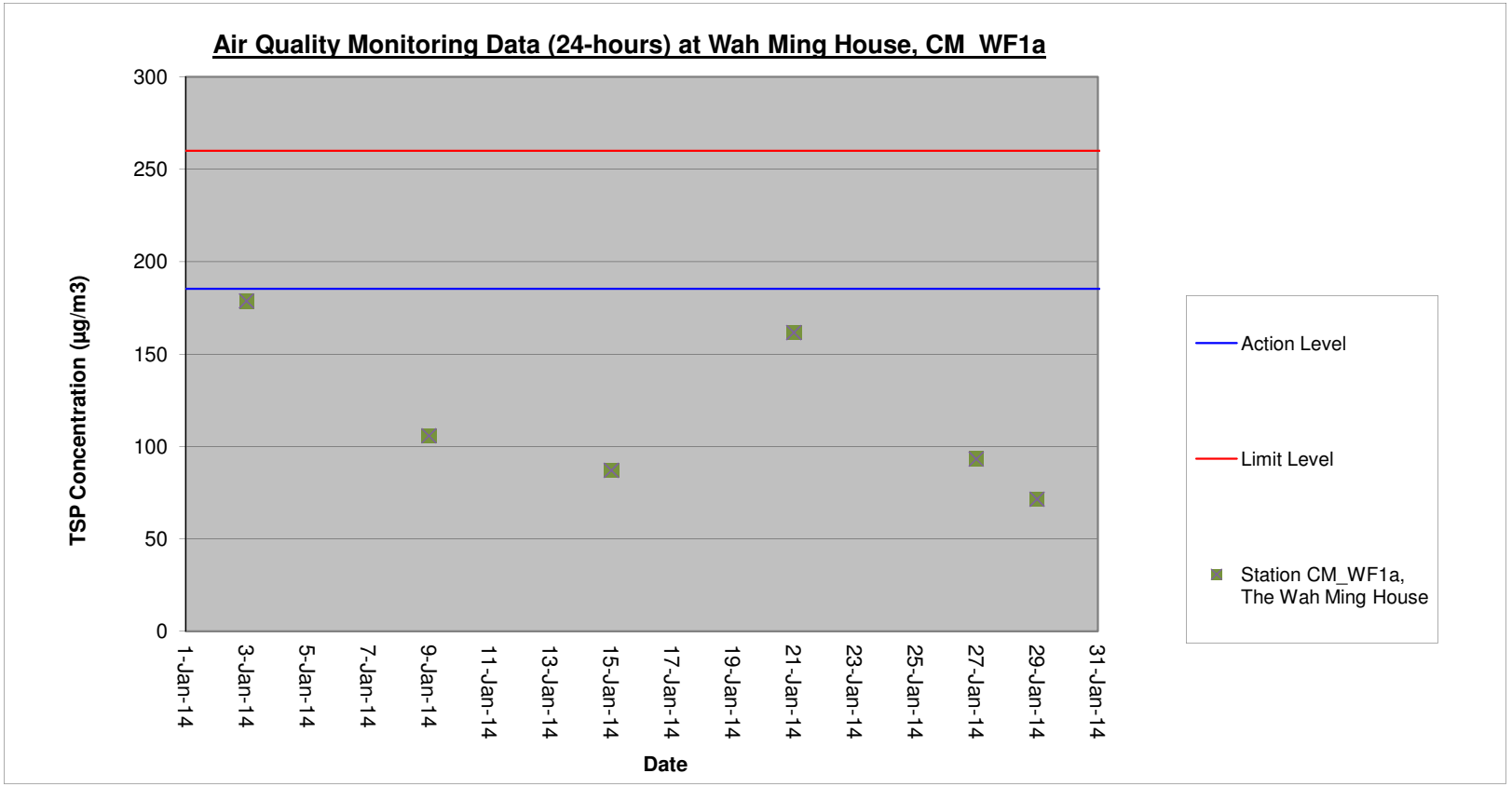
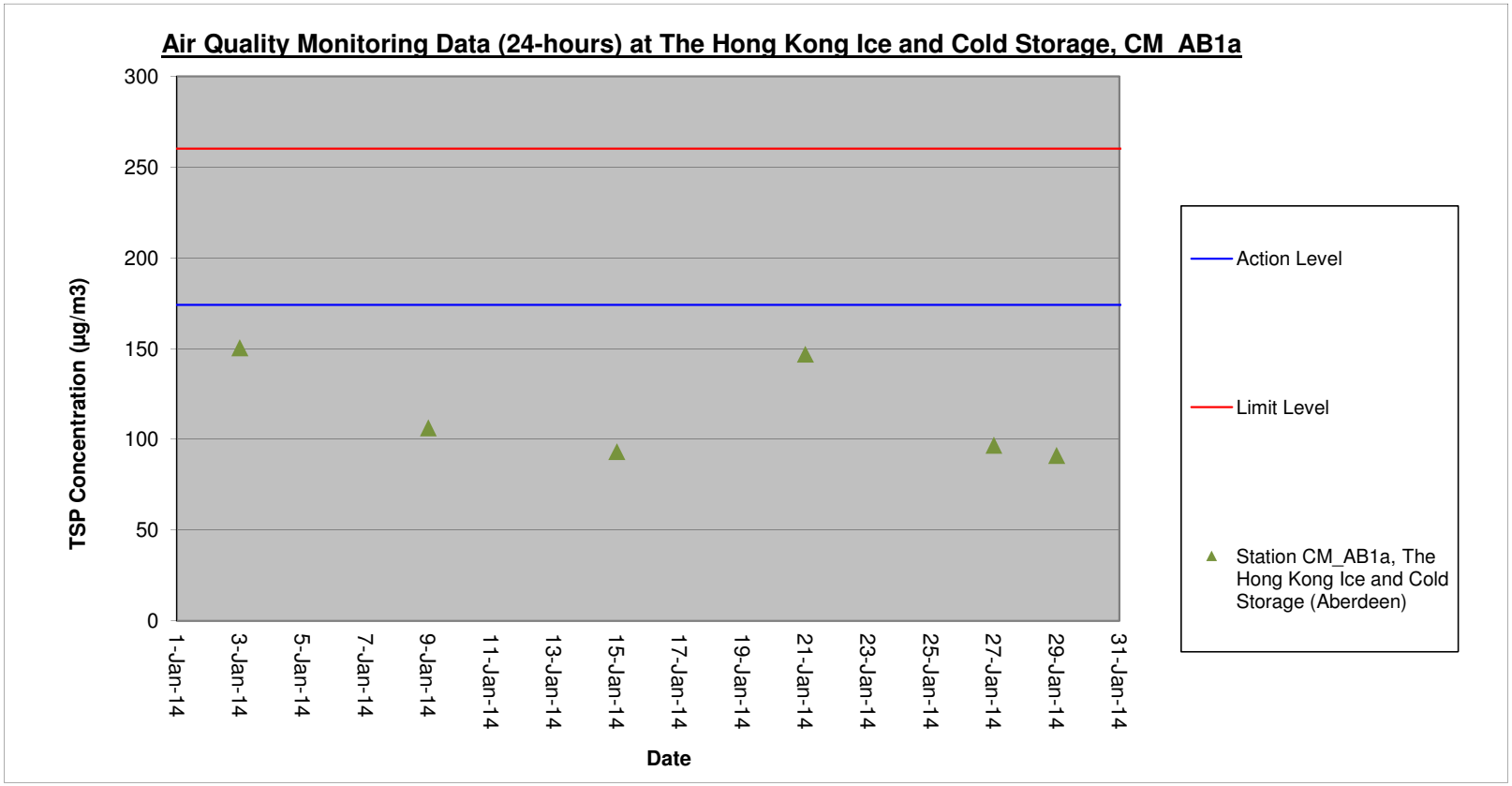
27-Jan-14
29-Jan-14
31-Jan-14
Date
Action Level
Limit Level
Station CM_FM1, Western Wholesale Food Market


Air Quality Monitoring Data (24-hours) at The Arcade, Cyberport, CM_CB1a
TSP Concentration (µg/m3)
300
250
200
150
100
50
0
The HVS was operated less than 24 hours at Cyberport PTW on 3 January 2014
1-Jan-14
3-Jan-14
5-Jan-14
7-Jan-14
9-Jan-14
11-Jan-14
13-Jan-14
15-Jan-14
17-Jan-14
19-Jan-14
21-Jan-14
23-Jan-14
25-Jan-14
27-Jan-14
29-Jan-14
31-Jan-14
Date
Action Level
Limit Level
Station CM_CB1a, The Arcade, Cyberport


Air Quality Monitoring Data (24-hours) at Wah Ming House, CM_WF1a
TSP Concentration (µg/m3)
300
250
200
150
100
50
0
1-Jan-14
3-Jan-14
5-Jan-14
7-Jan-14
9-Jan-14
11-Jan-14
13-Jan-14
15-Jan-14
17-Jan-14
19-Jan-14
21-Jan-14
23-Jan-14
25-Jan-14
27-Jan-14
29-Jan-14
31-Jan-14
Date
Action Level
Limit Level
Station CM_WF1a, The Wah Ming House


Air Quality Monitoring Data (24-hours) at The Hong Kong Ice and Cold Storage, CM_AB1a
TSP Concentration (µg/m3)
300
250
200
150
100
50
0
1-Jan-14
3-Jan-14
5-Jan-14
7-Jan-14
9-Jan-14
11-Jan-14
13-Jan-14
15-Jan-14
17-Jan-14
19-Jan-14
21-Jan-14
23-Jan-14
25-Jan-14
27-Jan-14
29-Jan-14
31-Jan-14
Date
Action Level
Limit Level
Station CM_AB1a, The Hong Kong Ice and Cold Storage (Aberdeen)

APPENDIX L

LANDSCAPE AND VISUAL MONITORING REPORT

REPORT

Leighton – LNS Joint Venture

Contract No. DC/2007/24 Harbour Area Treatment Scheme Stage 2A - Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun: 49th *Monthly Landscape & Visual Monitoring Report*

February 2014

Environmental Resources Management
16/F DCH Commercial Centre
25 Westland Road
Quarry Bay, Hong Kong
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E-mail: post.hk@erm.com
http://www.erm.com

REPORT

Leighton – LNS Joint Venture

Contract No. DC/2007/24 Harbour Area Treatment Scheme Stage 2A - Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun: 49th *Monthly Landscape & Visual Monitoring Report*

February 2014

Reference 0109356

For and on behalf of ERM-Hong Kong, Limited

Approved by: Frank Wan

Signed:

Position: Partner

Certified by:

Registered Landscape Architect,
Tai Kai Wai

Date: 14 February 2014

CONTENTS

1 LANDSCAPE AND VISUAL IMPACT MONITORING

1.1 INTRODUCTION

The construction works of *DC/2007/24 Harbour Area Treatment Scheme Stage 2A (HATS2A) - Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun* (the Project) commenced on 23 December 2009. This is the forty ninth monthly landscape and visual (L&V) monitoring report presenting the findings of the L&V site audit conducted during the period from 1 to 31 January 2014.

1.2 MONITORING PARAMETERS

According to the EM&A Manual, the L&V monitoring includes auditing the design, implementation and maintenance of L&V mitigation measures to ensure that they are undertaken in accordance with the recommendations of the approved EIA Report (*EIA-148/2008*). The forty ninth monthly site audit was undertaken on 27 January 2014 at work sites in Sai Ying Pun, Sandy Bay, Cyberport, Wah Fu and Aberdeen.

The L&V mitigation measures recommended in the approved EIA Report (*EIA-148/2008*) for the construction phase are listed in *Table 1.1* and the landscape mitigation measure plan are shown in *Annex A*.

The implementation statuses of the proposed landscape mitigation measures for the construction phase are recorded and summarised in *Annex B*.

Table 1.1 Proposed Landscape Mitigation Measures for Construction Phase

ID No.	Landscape and Visual Mitigation Measures	Sites
CM1	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	Sai Ying Pun, Sandy Bay, Cyberport, Wah Fu and Aberdeen
CM2	Existing trees to be retained on site should be carefully protected during construction.	Sandy Bay, Cyberport, Wah Fu and Aberdeen,
CM3	Trees unavoidably affected by the works should be transplanted where practical.	Sandy Bay, Cyberport and Aberdeen
CM4	Compensatory tree planting should be provided to compensate for felled trees.	Sandy Bay, Cyberport and Aberdeen
CM5	Control of night-time lighting.	Sai Ying Pun, Sandy Bay, Cyberport, Wah Fu and Aberdeen
CM6	Erection of decorative screen hoarding compatible with the surrounding setting.	Sai Ying Pun, Sandy Bay, Cyberport, Wah Fu and Aberdeen

2 SITE AUDIT FINDINGS AND OBSERVATIONS

The L&V site audit was conducted on 27 January 2014 and the findings and observations are presented as below.

2.1 FOLLOW-UP ACTIONS AFTER THE PREVIOUS SITE AUDIT

Follow-up actions addressing general tree issues identified in the previous site audits (i.e. poor health of transplanted and retained trees) remain outstanding at the Sandy Bay, Cyberport and Aberdeen sites.

All L&V mitigation measures presented in *Table 1.1* have been implemented in full except for CM2 at the sites at Sandy Bay, Cyberport and Aberdeen site.

Sandy Bay Site

(1) The T017(T) were still in very poor health;

(2) The condition of the retained tree T053(R) was still deteriorating with damages to its stems and foliage since the audit of September 2011;

(3) Tree identification tag was still observed missing for retained tree T049(R). The Contractor was reminded again to provide proper tree identification tags for the retaining trees; and

(4) The tree without label at the entrance of Sandy Bay site was still observed with decay fungi. The Contractor was reminded again to apply fungicide, remove the decayed part and provide tree identification tag for the tree.

The Contractor was asked to inspect the conditions of the trees at Sandy Bay Site and take the necessary mitigation measures immediately to improve the overall health condition of all the retained and transplanted trees at the site.

Cyberport Site

(1) Excessive weeds around the retained trees T067(R) had been removed;

(2) The identification tag for the retained tree T048(R) was still missing. The Contractor had been asked to provide a proper tree tag for the retained tree;

(3) General refuse was observed on the retained trees T068(R). The Contractor was reminded to remove the refuse; and

(4) The condition of the retained tree T068(R) was still deteriorating with shrunken leaves. The Contactor was reminded to keep reviewing the condition of the tree.

Aberdeen Site

(1) The conditions of the retained trees T078(R), T079(R) and T080(R) were still deteriorating with some of their stems and leaves dying off since the audit of November 2011.

(2) The tree protection zone for retained tree T078(R), T079(R) and T080(R) was still observed damaged. The Contractor was reminded to repair the tree protection zone;

(3) The tree protection zone for retained tree T106 was still observed damaged. The Contractor was reminded to repair the tree protection zone; and

(4) The tree without label at the backyard of Aberdeen storage site was still observed with decay fungi. The Contractor was reminded to apply fungicide, remove the decayed part and provide tree identification tag for the tree.

The Contractor was asked to inspect the condition of the trees at Aberdeen works site and take the necessary mitigation measures immediately to improve the overall health condition of the retained trees.

2.2 *OBSERVATIONS AND RECOMMENDATIONS*

Apart from those outstanding observations mentioned in *Section 2.1*, the new observations recorded in this reporting month are as follows:

Sites at Sai Ying Pun, Wah Fu and Aberdeen Site

Nil

Sandy Bay Site

The key new observation during the site inspections at Cyberport site was as follows:

(1) Protection fencing had been provided for retained tree T039(R). However tree tag was still missing (*Photo 1*). The Contractor was reminded to provide proper tree tag for the retained tree.

Cyberport Site

The key new observation during the site inspections at Cyberport site was as follows:

(2) Construction material within the tree protection zone of the retained trees T075(R) had been removed. However the tree protection zone was still observed damaged *(Photo 2)*. The Contractor was reminded to repair the tree protection zone.

The Contractor was repeatedly asked to follow-up the outstanding actions for this site.

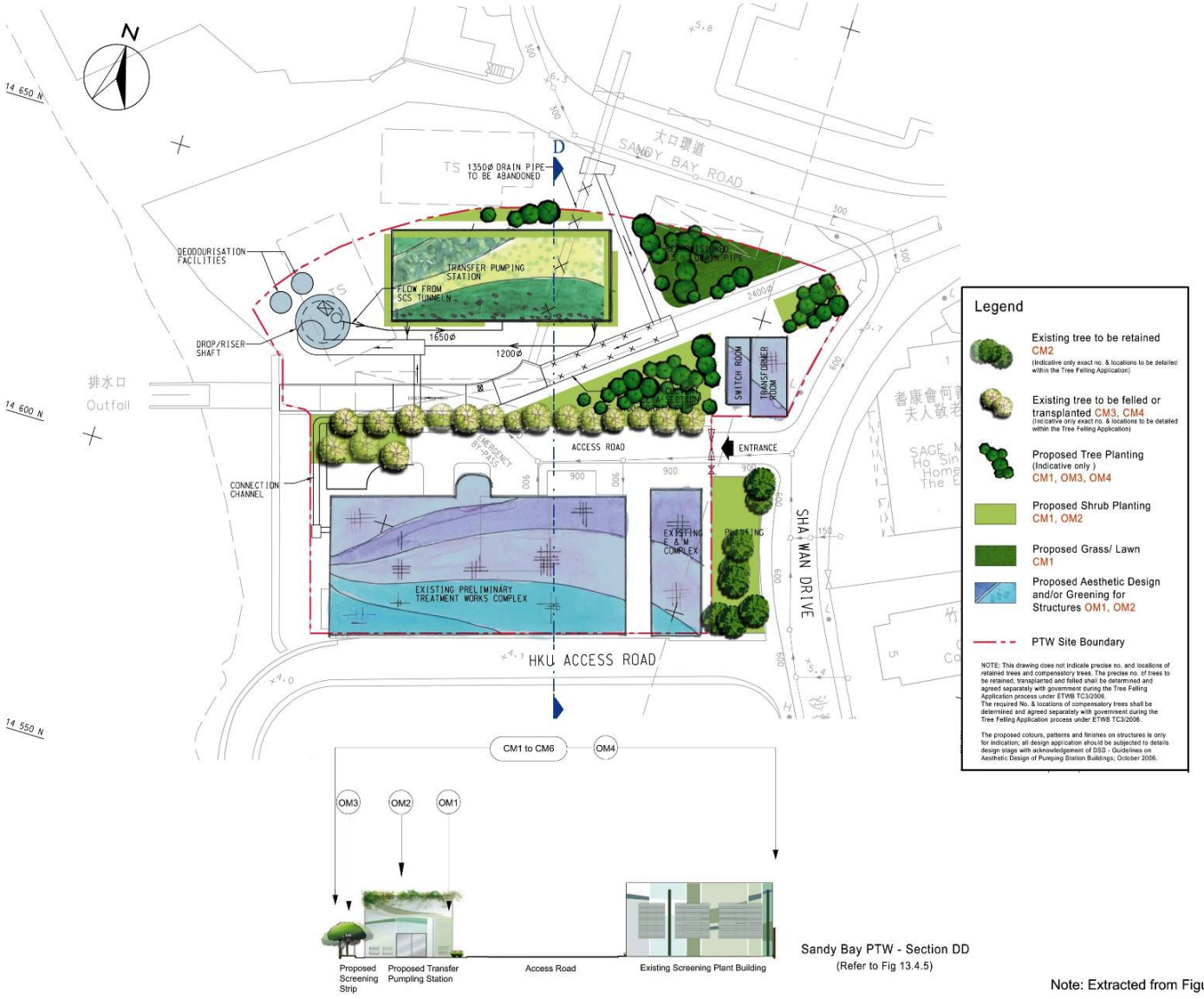
3 CONCLUSIONS

The forty ninth monthly landscape and visual site audit was undertaken on 27 January 2014 to check the design, implementation and maintenance of L&V mitigation measures at work sites in Sai Ying Pun, Sandy Bay, Cyber Port, Wah Fu and Aberdeen under the Contract *DC/2007/24 of Harbour Area Treatment Scheme Stage 2A (HATS2A) - Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun*.

All L&V mitigation measures have been implemented in full except for several areas as described in *Sections 2.1* and *2.2*. After discussion with the Contractor about the issues, feasible and effective remedial measures have been agreed. The Contractor was asked to ensure that proper mitigation measures are implemented.

Annex A

Landscape Mitigation Measures (Reference to Approved EIA Report EIA-148/2008)



Sandy Bay PTW - Section DD
(Refer to Fig 13.4.5)

Note: Extracted from Figures 13.4.5 & 13.4.12 of EIA-148/2008.

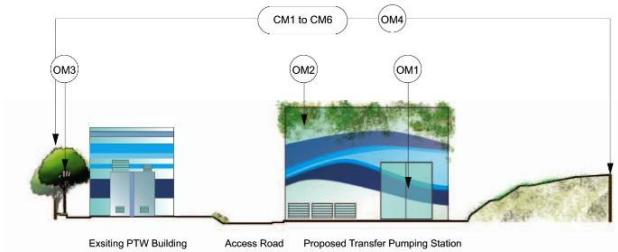
Figure 1.1

Landscape Mitigation Measure in Sandy Bay

FILE: 0109356-ILV-SB-Fig1.1
DATE: 30 March 2010

Environmental Resources Management

ERM



Cyberport PTW - Section EE
(Refer to Fig 13.4.6)

Note: Extracted from Figures 13.4.6 & 13.4.13 of EIA-148/2008.

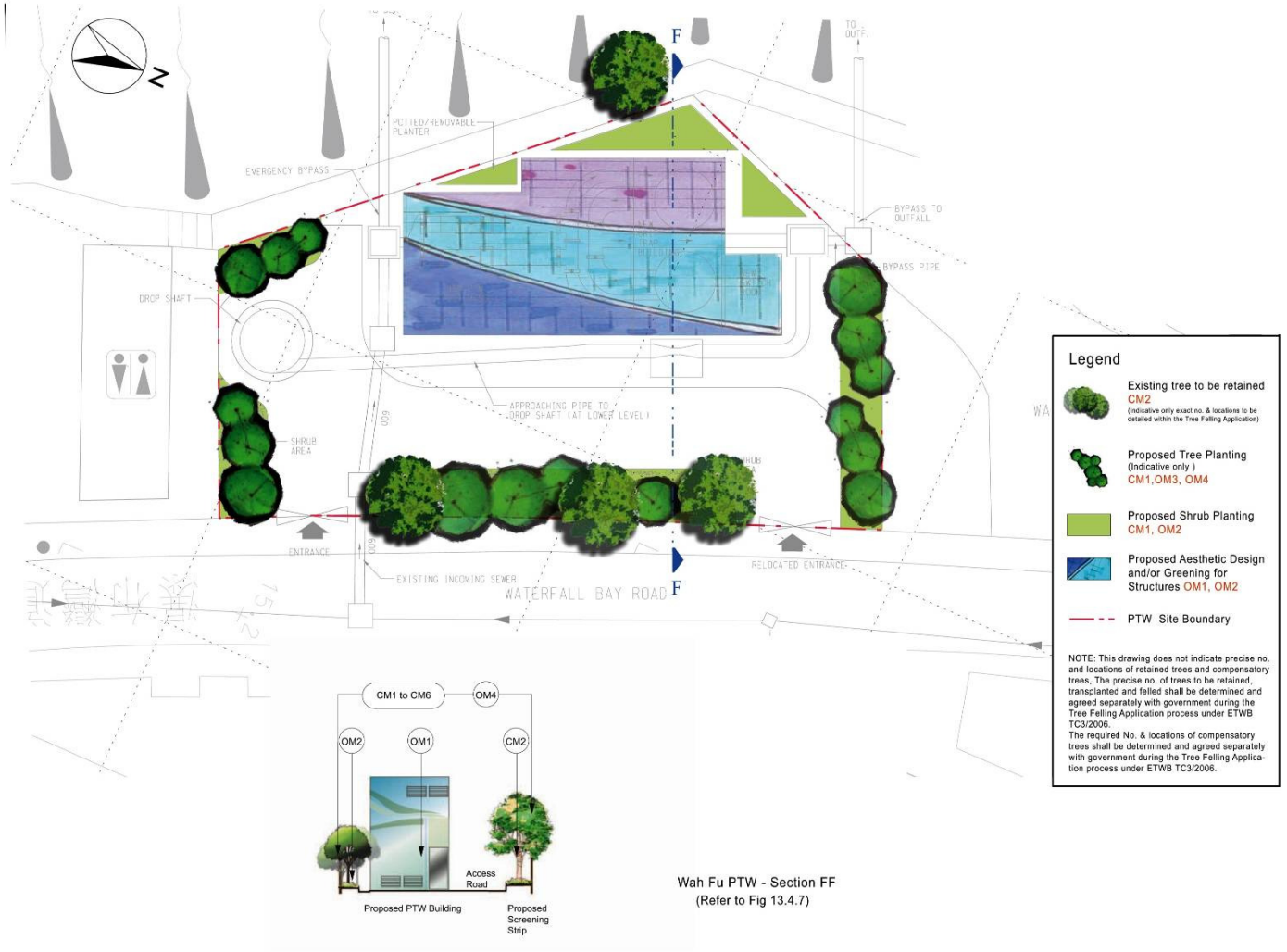
Figure 1.2

Landscape Mitigation Measure in Cyberport

FILE: 0109356-ILV-CP-Fig1.2.cdr
DATE: 30 March 2010

Environmental Resources Management

ERM



Wah Fu PTW - Section FF
(Refer to Fig 13.4.7)

Note: Extracted from Figures 13.4.7 & 13.4.13 of EIA-148/2008.

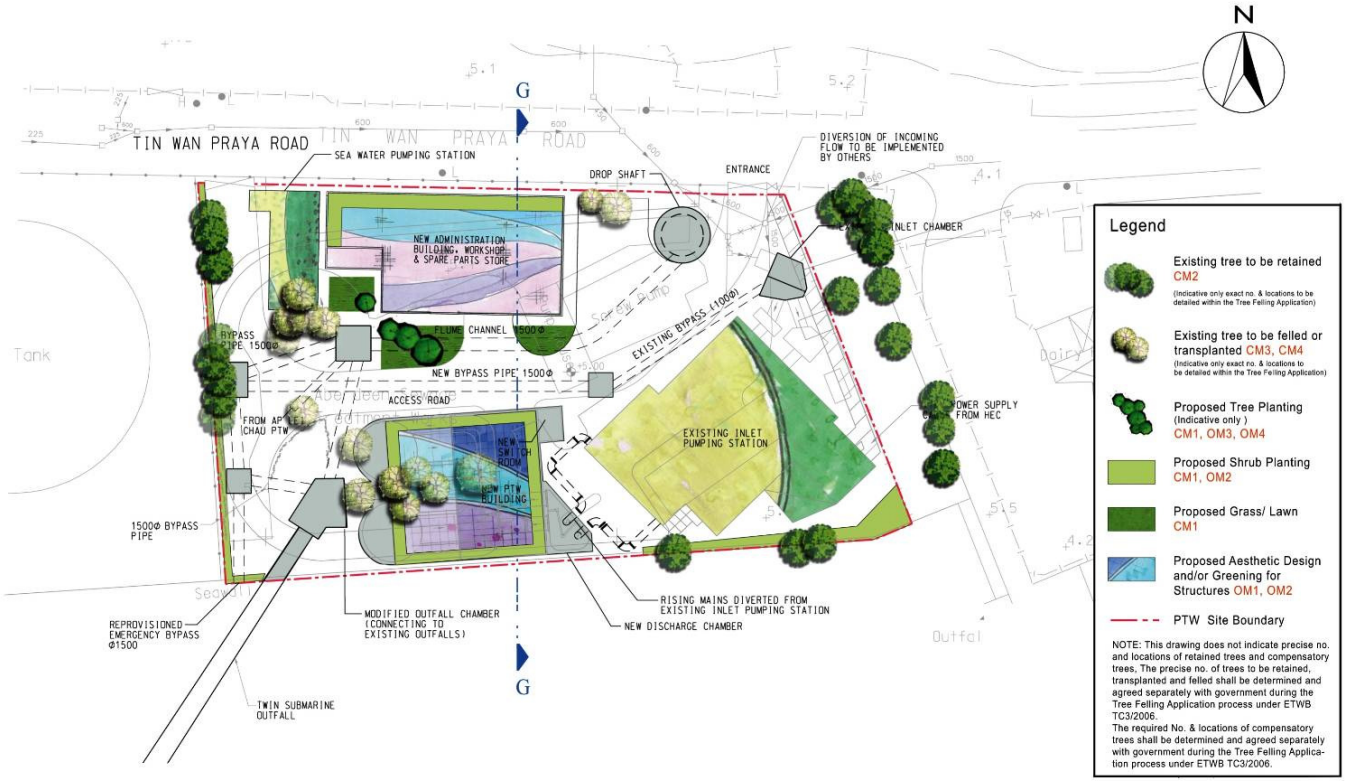
Figure 1.3

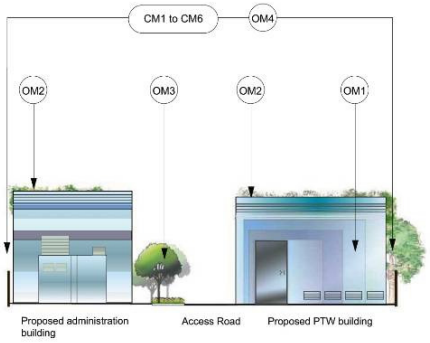
Landscape Mitigation Measure in Wah Fu

FILE: 0109356-ILV-WF-Fig1.3.cdr
DATE: 30 March 2010

Environmental Resources Management

ERM





Aberdeen PTW - Section GG
(Refer to Fig 13.4.8)

Note: Extracted from Figures 13.4.8 & 13.4.14 of EIA-148/2008.

Figure 1.4

Landscape Mitigation Measure in Aberdeen

FILE: 0109356-ILV-A-Fig1.4.cdr
DATE: 30 March 2010

Environmental Resources Management

ERM

Annex B

Site Inspection Checklist

Harbour Area Treatment Scheme (HATS) Stage 2A
Contract No. DC/2007/24
Construction of Sewage Conveyance from Aberdeen to Sai Ying Pun
Landscape & Visual Monitoring Report

Reporting Period : 1 January to 31 January 2014

Site Inspection Date : 27 January 2014

Inspected By : Andrew Fung

Site	CM1 **Topsoil identified stripped and stored for re-use in the construction of soft landscape works, where practical**	CM2 **Existing trees to be retained on site should be carefully protected during construction**	CM3 **Trees unavoidably affected by the works should be transplanted where practical.**	CM4 **Compensatory tree planting should be provided to compensate for felled trees.**	CM5 **Control of night-time lighting.**	CM6 **Erection of decorative screen hoarding compatible with the surrounding setting.**	**Recommendations**
Sai Ying Pun	No major excavation works had been conducted since the last audit. No stockpile of excavated soil was observed.	Not Applicable - No tree was identified at the Sai Ying Pun Area	Not Applicable - No tree was identified at the Sai Ying Pun Area	Not applicable - No tree was identified at the Sai Ying Pun Area	Night-time lighting with appropriate controls was used for 24 hours a day from 1 to 31 January 2014 except on Sunday	Decorative screen hoarding were erected and is compatible to the surrounding setting.	Not required
Sandy Bay	No major excavation works had been conducted since the last audit. No stockpile of excavated soil was observed.	Existing trees have been retained on site, fenced off and protected properly except for the retained/ transplanted trees T017(T), T039(R), T049(R), T053(R).	No tree was transplanted during this reporting month.	Not applicable - Compensatory tree planting has not been started yet.	Night-time lighting with appropriate controls was used for 24 hours a day from 1 to 31 January 2014 except on Sunday	Decorative screen hoarding were erected and is compatible to the surrounding setting.	The Contractor has been asked to implement all necessary measures to protect the trees.

Site	CM1 **Topsoil identified stripped and stored for re-use in the construction of soft landscape works, where practical**	CM2 **Existing trees to be retained on site should be carefully protected during construction**	CM3 **Trees unavoidably affected by the works should be transplanted where practical.**	CM4 **Compensatory tree planting should be provided to compensate for felled trees.**	CM5 **Control of night-time lighting.**	CM6 **Erection of decorative screen hoarding compatible with the surrounding setting.**	Recommendations
Cyberport	No major excavation works had been conducted since the last audit. No stockpile of excavated soil was observed.	Existing trees have been retained on site, fenced off and protected properly except for the retained trees T048(R), T068(R) and T075(R).	No tree was transplanted during this reporting month.	Not applicable - Compensatory tree planting has not been started yet.	Night-time lighting with appropriate controls was used for 24 hours a day from 1 to 31 January 2014	Noise enclosure was erected over the shaft. A yellow tone was used for the materials of the noise enclosure, similar to the colour of the existing STW façade.	The Contractor has been asked to implement all necessary measures to protect the trees.
Wah Fu	No major excavation works had been conducted since the last audit. No stockpile of excavated soil was observed.	Existing trees have been retained on site, fenced off and protected properly.	Not Applicable - No existing tree was identified to be within the works area.	Not applicable - No existing tree was identified to be within the works area.	Not applicable - No night-time lighting was used.	Screening was erected and was compatible to the surrounding setting.	Not required
Aberdeen	No major excavation works had been conducted since the last audit. No stockpile of excavated soil was observed.	Existing trees have been retained on site, fenced off and protected properly except for the retained/ transplanted trees T106, T078(R), T079(R) and T080(R).	All the tree transplantation works have been completed and all transplanted trees were properly supported by tripods.	Not applicable - Compensatory tree planting has not been started yet.	Night-time lighting with appropriate controls was used for 24 hours a day from 1 to 31 January 2014	Screen hoarding was erected and the grey colour is compatible to the surrounding setting.	The Contractor has been asked to implement all necessary measures to protect the trees.

	
Sandy Bay Site – Photo 1	Cyberport Site – Photo 2
Protection fencing had been provided for retained tree T039(R). However tree tag was still missing.	Construction material within the tree protection zone of the retained trees T075(R) had been removed. However the tree protection zone was still observed damaged.

_____

(Name: Tai Kai Wai,
Registered Landscape Architect)

APPENDIX M

NOTIFICATION OF EXCEEDANCES

Contract No. DC/2007/24
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Notification of Environmental Quality Limit Exceedance Notification No.: 251

Date of Notification: 6 January 2014

Works Inspected: Data collected from normal weekday night time noise monitoring on 2nd January 2014 (between 23:00-07:00 hrs of next day)

Noise Monitoring Location: M8a - Near security room of Wah Lai House

Parameter: Noise - $L_{eq(5\ min)}$

Action & Limit Levels			**Measured Noise Level ***			
Time Period	Action Level	Limit Level	Time :	23:00 – 23:15 hrs on 2nd January 2014		
23:00–07:00 hrs Normal weekday	1 complaint	50dB(A)	$L_{eq(5\ min)}$ reading	1st	2nd	3rd
				58.9 dB(A)	60.4 dB(A)	60.7 dB(A)

* Free-field measurement, +3dB correction

Possible Reason for Action or Limit Level Non-compliance:

An exceedance above the Limit Level was recorded at M8a during the night-time noise monitoring on 2nd January 2014 (normal weekday).

According to the Contractor's record, powered mechanical equipment (PME) used for the Aberdeen works site during the noise monitoring period included tower crane, water pump and ventilation fan. The Contractor complied with the conditions stipulated in the Construction Noise Permit (CNP) No. GW-RS1429-13.

According to the Project Baseline Environmental Monitoring Report (Doc No. GEN/026), the nighttime baseline noise levels at M8 (Wah Lai House) ranged from 52.5dB(A) to 64.4dB(A) which already exceeded the Limit Level of 50dB (A) set out in the Project EM&A Manual. The measured noise levels were within the range of night-time baseline noise levels.

Based on our site observations during the noise monitoring period, the major noise source was road traffic noise. Hence, the above exceedance was considered to be non-project related.

Actions taken/ to be taken:

As the noise exceedance was not considered to be related to project works, no immediate actions are required.

Inspected by : Ruby Law Title : Environmental Technician

Date : 6th January 2013

Reviewed and approved by : Sharifah Or Title : Environmental Team Leader

Date : 6th January 2013

Sent to: Engineer's Representative, Contractor, EPD & IEC

Contract No. DC/2007/24
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Notification of Environmental Quality Limit Exceedance Notification No.: 252

Date of Notification: 10th January 2014

Works Inspected: Data collected from night-time (between 23:00-07:00 hrs of next day) noise monitoring on 9th January 2014

Noise Monitoring Location: M5a —near entrance of Chuk Lam Ming Tong

Parameter: Noise - $L_{eq(5\ min)}$

Action & Limit Levels			**Measured Noise Level ***			
Time Period	Action Level	Limit Level	Time :	23:00 – 23:15 hrs on 9th January 2014		
23:00–07:00 hrs Normal weekday	1 complaint	45 dB(A)	$L_{eq(5\ min)}$ reading	1st	2nd	3rd
				57.8	62.6	64.7

* façade measurement

Possible Reason for Action or Limit Level Non-compliance:

An exceedance in Limit Level was recorded during night-time noise monitoring at M5a on 9th January 2014.

From the Contractor's record, powered mechanical equipment (PME) used in the Sandy Bay works site during noise monitoring period included only PME as listed in Construction Noise Permit (CNP) No. GW-RS1296-13.

A baseline noise level monitoring at this monitoring location (for restricted hours) was conducted on 6th November 2010 from 23:00 to 23:15 hrs. All PME listed under the CNP No. GW-RS0940-10 was ensured to shut down during the measurement. The average 5-min baseline noise level was found to be 60.5dB (A), which already exceeded the Limit Level of 45dB (A) set out in the Project EM&A Manual. It is also noted from the Project Baseline Environmental Monitoring Report (Doc No. GEN/026) that the night-time Background Noise Level at M5 (roof of Chuk Lam Ming Tong) ranged from 47.0dB(A) to 82.8dB(A).

Hence, the above exceedance was considered to be non-project related. Based on observations during the noise monitoring period, the major noise sources were road traffic noise at San Wan Drive.

Actions taken/ to be taken:

As the noise exceedance was not considered to be related to project works, no immediate actions are considered necessary.

Inspected by : Ruby Law Title : Environmental Technician

Date : 10th January 2014

Reviewed and approved by : Sharifah Or Title : Environmental Team Leader

Date : 10th January 2014

Sent to: Engineer's Representative, Contractor, EPD & IEC

Contract No. DC/2007/24
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Notification of Environmental Quality Limit Exceedance Notification No.: 253

Date of Notification: 27 January 2014

Works Inspected: Noise monitoring data was collected during the nigh-time period (between 23:00-07:00 hrs of next day) of 23 January 2014 (normal weekday)

Noise Monitoring Location: M3 — Kwan Yick Building Phase III

Parameter: Noise - $L_{eq(5\ min)}$

Action & Limit Levels			**Measured Noise Level ***			
Time Period	Action Level	Limit Level	Time :	23:00 – 23:15 hrs on 23 January 2014		
23:00–07:00 hrs Normal weekday	1 complaint	55dB(A)	$L_{eq(5\ min)}$ reading	1st	2nd	3rd
				66.7dB(A)	66.7 dB(A)	67.1 dB(A)

* façade measurement

Possible Reason for Action or Limit Level Non-compliance:

An exceedance of Limit Level was recorded at M3 during the night-time period on 23 January 2014 (normal weekday).

According to the Contractor's record, powered mechanical equipment (PME) including gantry crane, air blower and ventilation fan as those listed in Construction Noise Permit (CNP) No. GW-RS1172-13 was used at the Fung Mat Road works site during noise monitoring period.

According to the Project Baseline Environmental Monitoring Report (Doc No. GEN/026), the nighttime background noise levels at M3 ranged from 57.2 dB(A) to 70.3 dB(A). The measured noise levels on 23 January 2014 were within the range of background noise levels.

Based on observations during the noise monitoring period, the major noise sources were road traffic noise from Western Harbour Crossing and engine noise of turbojet. Therefore, the noise exceedance is considered to be non-project related.

Actions taken/ to be taken:

As the noise exceedances is not considered to be related to project works, no immediate actions are necessary.

Inspected by : Ray Cheung Title : Assistant Environmental Consultant

Date : 27th January 2014

Reviewed and approved by : Sharifah Or Title : Environmental Team Leader

Date : 27th January 2014

Sent to: Engineer's Representative, Contractor, EPD & IEC

Contract No. DC/2007/24
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System from Aberdeen to Sai Ying Pun

Notification of Environmental Quality Limit Exceedance Notification No.: 254

Date of Notification: 6 February 2014

Works Inspected: Data collected from normal weekday night time noise monitoring on 28th January 2014 (between 23:00-07:00 hrs of next day)

Noise Monitoring Location: M8a - Near security room of Wah Lai House

Parameter: Noise - $L_{eq(5\ min)}$

Action & Limit Levels			**Measured Noise Level ***			
Time Period	Action Level	Limit Level	Time :	23:00 – 23:15 hrs on 28th February 2014		
23:00–07:00 hrs Normal weekday	1 complaint	50dB(A)	$L_{eq(5\ min)}$ reading	1st	2nd	3rd
				61.6 dB(A)	60.3 dB(A)	61.2 dB(A)

* Free-field measurement, +3dB correction

Possible Reason for Action or Limit Level Non-compliance:

An exceedance above the Limit Level was recorded at M8a during the night-time noise monitoring on 28th January 2014 (normal weekday).

According to the Contractor's record, powered mechanical equipment (PME) used for the Aberdeen works site during the noise monitoring period included tower crane, water pump and ventilation fan. The Contractor complied with the conditions stipulated in the Construction Noise Permit (CNP) No. GW-RS1429-13.

According to the Project Baseline Environmental Monitoring Report (Doc No. GEN/026), the nighttime baseline noise levels at M8 (Wah Lai House) ranged from 52.5dB(A) to 64.4dB(A) which already exceeded the Limit Level of 50dB (A) set out in the Project EM&A Manual. The measured noise levels were within the range of night-time baseline noise levels.

Based on our site observations during the noise monitoring period, the major noise source was road traffic noise. Hence, the above exceedance is considered to be non-project related.

Actions taken/ to be taken:

As the noise exceedance is not considered to be related to project works, no immediate actions are required.

Inspected by : Ruby Law Title : Environmental Technician

Date : 6th February 2014

Reviewed and approved by : Sharifah Or Title : Environmental Team Leader

Date : 6th February 2014

Sent to: Engineer's Representative, Contractor, EPD & IEC

APPENDIX N

SUMMARY RECORDS OF SITE INSPECTIONS

7 January 2014

Aberdeen PTW

No inspection was undertaken for this week due to the Contractor arrangement

Cyberport PTW

Follow up actions for previous site audit:

1. An empty chemical drum near the chemical storage container was removed.(PhotoF_1)

Previous Environmental Site Inspection Checklist – Report No. 131231:

1. The empty chemical drum was found near the chemical storage container since inspection on 17 December 2013.(Photo 1)
2. Waste water from concrete sampling was stored in an unsuitable container since inspection on 24 December 2013. The wastewater may overflow during the concrete sampling. (Photo 3)
3. The concrete wastewater was accumulated near the RE's car park since inspection on 31 December 2013. (Photo 4)

Notes / Issues Recorded On Site:

Chemical Material Storage:

1. Some chemical drums were found without drip trays and chemical labels at the following location
   i) near the RE's car park. (Photo 1); and
   ii) access between noise enclosure and DSD treatment plant. (Photo 2)

Water Quality:

2. Wastewater from concrete sampling was stored in an unsuitable container. The waste water may overflow during the concrete sampling. (Photo 3)
3. The concrete wastewater was accumulated near the RE's car park. (Photo 4)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Current Environmental Site Inspection Checklist – Report No. 140107:

Chemical Material Storage:

1. The Contractor was reminded to provide chemical labels and drip trays for the chemical drums near the RE's car park and access between noise enclosure and DSD treatment plant.

Water Quality:

2. The Contractor was reminded to treat the wastewater generated from concrete sampling before discharge.
3. The Contractor was recommended to clear the concrete wastewater and prevent wastewater to leak to nearby gully.

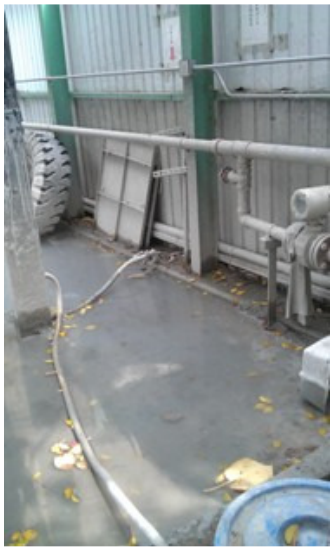
PhotoF_1 An empty chemical drum near the chemical storage container was removed.

Photo 1 Some chemical drums were found without drip trays and chemical labels near the RE's car park.

Photo 2 Some chemical drums were found without drip trays and chemical labels in access between noise enclosure and DSD treatment plant.

Photo 3 Wastewater from concrete sampling was stored in an unsuitable container. The waste water may overflow during the concrete sampling

Photo 4 The concrete wastewater was accumulated near the RE's car park



Fung Mat Road Site

Follow up actions for previous site audit:

Previous Environmental Site Inspection Checklist – Report No. 131231

Nil.

Notes / Issues Recorded On Site:

Noise:

1. No noise label was provided for an air compressor inside the noise enclosure.

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Current Environmental Site Inspection Checklist – Report No. 140107

Noise:

1. According to the Contractor's information, the new air compressor was under testing and safety checking. The Contractor was reminded to provide a noise level for the air compressor.

Photo 1 No noise label was provided for an air ompressor inside the noise enclosure.

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Sandy Bay

Follow up actions for previous site audit: **Previous Environmental Site Inspection Checklist – Report No. 131224:** 1. The storage area for rechargeable battery was not locked since the site inspection undertaken on 24 December 2013.(Photo 1)
Notes / Issues Recorded On Site: **Waste/Chemical Management:** 1. The storage area for rechargeable battery was not locked. (Photo 1) 2. The chemical drums near site entrance were observed without drip trays. (Photo 2)
Corrective Actions – Mitigation Measures Implemented or Proposed (if any): **Current Environmental Site Inspection Checklist – Report No. 131231:** **Chemical/Waste Management:** 1. The Contractor was reminded to lock the chemical storage areas. 2. The Contractor was reminded to provide drip trays to chemical drums near entrance.

Photo 1 The storage area for rechargeable battery was not locked.

Photo 2 The chemical drums near site entrance were observed without drip trays.

Wah Fu PTW

No inspection was undertaken for this week due to the Contractor arrangement

15 January 2014

Aberdeen PTW

No inspection was undertaken for this week due to the Contractor arrangement

Cyberport PTW

Follow up actions for previous site audit: 1 **Previous Environmental Site Inspection Checklist – Report No. 140107:** 1. The empty chemical drum was found near the chemical storage container since the site inspection undertaken on 17 December 2013.(Photos 1 and 2) 2. Waste water from concrete sampling was stored in an unsuitable container since the site inspection undertaken on 24 December 2013. The wastewater may overflow during the concrete sampling. (Photo 3) 3. The concrete wastewater was accumulated near the RE's car park since the site inspection undertaken on 31 December 2013. (Photo 4)
Notes / Issues Recorded On Site: **Chemical Material Storage:** 1. Some chemical drums were found without drip trays and chemical labels: iii) near the RE's car park. (Photo 1); and iv) in the access between noise enclosure and DSD treatment plant. (Photo 2) **Water Quality:** 2. Wastewater from concrete sampling was stored in an unsuitable container. The waste water may overflow during the concrete sampling. (Photo 3) 3. The concrete wastewater was accumulated near the RE's car park. (Photo 4) **Air Quality:** 4. Concrete bags were found without cover. (Photo 5) **General Housekeeping:** 5. Stagnant water was found in a barrel next to the Contractor's office. (Photo 6)
Corrective Actions – Mitigation Measures Implemented or Proposed (if any): **Current Environmental Site Inspection Checklist – Report No. 140115:** **Chemical Material Storage:** 1. The Contractor was reminded to provide chemical labels and drip trays for the chemical drums near the RE's car park and in the access between noise enclosure and DSD treatment plant. **Water Quality:** 2. The Contractor was reminded to treat the wastewater generated from concrete sampling before discharge. 3. The Contractor was recommended to clear the concrete wastewater and prevent wastewater to leak to nearby gullies. **Air Quality:** 4. The Contractor was recommended to provide cover for the cement bags. **General Housekeeping:** 5. The Contractor was reminded to clear the stagnant water in the barrel next to the Contractor's office.

Photo 1 Some chemical drums were found without drip trays and chemical labels near the RE's car park.

Photo 2 Some chemical drums were found without drip trays and chemical labels in the access between noise enclosure and DSD treatment plant.

Photo 3 Wastewater from concrete sampling was stored in an unsuitable container. The waste water may overflow during the concrete sampling

Photo 4 The concrete wastewater was accumulated near the RE's car park

Photo 5 Concrete bags were found without cover

Photo 6 Stagnant water was found in a barrel next to the Contractor's office

Fung Mat Road Site

Follow up actions for previous site audit:

Previous Environmental Site Inspection Checklist – Report No. 140107

1. No noise label was provided for an air compressor inside the noise enclosure since the site inspection undertaken on 7 January 2014.

Notes / Issues Recorded On Site:

1. No noise label was provided for an air compressor inside the noise enclosure (Photo1).

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Current Environmental Site Inspection Checklist – Report No. 140115

Noise:

1. According to the Contractor's information, the new air compressor was under testing and safety checking. The Contractor was reminded to provide a noise level for the air compressor.

Photo 1 No noise label was provided for an air compressor inside the noise enclosure.

Sandy Bay

Follow up actions for previous site audit:

1. The chemical drum near site entrance was removed. (PhotoF_1)

Previous Environmental Site Inspection Checklist – Report No. 140107:

2. The storage area for rechargeable battery was not locked since the site inspection undertaken on 24 December 2013.(Photo 1)

Notes / Issues Recorded On Site:

Waste/Chemical Management:

1. The storage area for rechargeable battery was not locked. (Photo 1)

Other Observation:

2. Oil stains were found near drip trays. (Photo 2)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Current Environmental Site Inspection Checklist – Report No. 140115:

Chemical/Waste Management:

1. The Contractor was reminded to lock the chemical storage areas.
2. The Contractor was reminded to clean the oil stains.

PhotoF_1 The chemical drum near site entrance was removed.

Photo 1 The storage area for rechargeable battery was not locked.

Photo 2 Oil stains were found near drip trays

Wah Fu PTW

No inspection was undertaken for this week due to the Contractor arrangement

21 January 2014

Aberdeen PTW

Follow up actions for previous site audit:

Previous Environmental Site Inspection Checklist – Report No. 140115

1. Cement bags in storage area were without cover since the site inspection undertaken on 26 November 2013. (Photo 1)
2. Oil leakage from a plant was found in the storage zone since the site inspection undertaken on 31 December 2013. (Photo 4)

Notes / Issues Recorded On Site:

Air Quality:

1. Cement bags were not covered properly. (Photo 1)

Waste / Chemical Management:

2. Unknown chemical was found inside the metal stockpiles.(photo 2)

The following item will be inspected in next inspection as the access was blocked during the site inspection.

Other Observation :

3. Oil leakage from a plant was found in the storage zone. (Photos 3 and 4)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Current Environmental Site Inspection Checklist – Report No. 140121

Waste/Chemical Management:

1. The Contractor was reminded to cover the dusty materials properly.
2. The Contractor was reminded to label the chemical drum and store it properly.
3. The Contractor was reminded to clear waste oil and prevent oil split out.

Photo 1 Cement bags were not covered properly.

Photo 2 Unknown chemical was found near the stockpiles

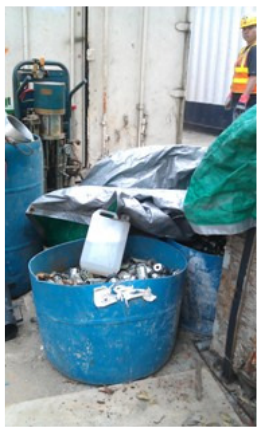

Photo 3 The access was blocked during the site inspection.

Photo 4 Oil leakage from a plant was found in the storage area.

Cyberport PTW

Follow up actions for previous site audit:

1. The empty chemical near the chemical storage container drums were removed.(PhotoF_1)

Previous Environmental Site Inspection Checklist – Report No. 140115:

1. Waste water generated from concrete sampling was stored in an unsuitable container since the site inspection undertaken on 24 December 2013. The wastewater may overflow during the concrete sampling. (Photo 2)
2. The concrete wastewater was accumulated near the RE's car park since the site inspection undertaken on 31 December 2013. (Photo 3)
3. Concrete bags were found without cover since the site inspection undertaken on 15 January 2014. (Photo 4)
4. Stagnant water was found in a barrel next to the Contractor's office since the site inspection undertaken on 15 January 2014. (Photo 5)

Notes / Issues Recorded On Site:

Chemical Material Storage:

1. Some chemical drums were found without drip trays under the Aqua. Sedimentation tank. (Photo 1)

Water Quality:

2. Wastewater from concrete sampling was stored in an unsuitable container. The waste water may overflow during the concrete sampling. (Photo 2)
3. The concrete wastewater was accumulated near the RE's car park. (Photo 3)

Air Quality:

4. Concrete bags were found without cover. (Photo 4)

General Housekeeping:

5. Stagnant water was found in a barrel next to the Contractor's office. (Photo 5)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Current Environmental Site Inspection Checklist – Report No. 140121:

Chemical Material Storage:

1. The Contractor was reminded to provide chemical labels and drip trays for the chemical drums under the Aqua. Sedimentation tank.

Water Quality:

2. The Contractor was reminded to treat the wastewater generated from concrete sampling prior to discharge.
3. The Contractor was recommended to clear the concrete wastewater and prevent wastewater to leak to nearby gullies.

Air Quality:

4. The Contractor was recommended to provide cover for the cement bags.

General Housekeeping:

5. The Contractor was reminded to clear the stagnant water in the barrel next to the Contractor's office.

Photo F_1 The empty chemical near the chemical storage container drums were removed.

Photo 1 Some chemical drums were found without drip trays under the Aqua. Sedimentation tank

Photo 2 Wastewater from concrete sampling was stored in an unsuitable container. The waste water may overflow during the concrete sampling.

Photo 3 The concrete wastewater was accumulated near the RE's car park.

Photo 4 Concrete bags were found without cover

Photo 5 Stagnant water was found in a barrel next to the Contractor's office

Fung Mat Road Site

Follow up actions for previous site audit:

Previous Environmental Site Inspection Checklist – Report No. 140115

1. No noise label was provided for an air compressor inside the noise enclosure since the site inspection undertaken on 7 January 2014.

Notes / Issues Recorded On Site:

Noise:

1. No noise label was provided for an air compressor inside the noise enclosure. (Photo1)

Chemical Management:

2. No dript trays were provided for some chemical drums near stockpiles.(Photo 2)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Current Environmental Site Inspection Checklist – Report No. 140121

Noise:

1. According to the Contractor's information, the new air compressor was under testing and safety checking. The Contractor was reminded to provide a noise level for the air compressor.

Chemical Management:

2. The Contractor was reminded to provide drip trays to chemical drums.

Photo 1 No noise label was provided for an air compressor inside the noise enclosure.

Photo 2 No dript trays were provided for some chemical drums near stockpiles.

Sandy Bay PTW

Follow up actions for previous site audit:

1. The storage area for rechargeable battery was locked. (PhotoF_1)
2. Oil stains near drip trays were cleared. (PhotoF_2)

Previous Environmental Site Inspection Checklist – Report No. 140115:

N/A

Notes / Issues Recorded On Site:

Waste / Chemical Management:

1. Non recycle materials were found in the plastic recycle bin. (Photo 1)
2. Chemical drums were found without chemical labels and drip trays in the noise enclosure. (Photo 2)

Other Observation:

3. Unknown liquid was found near the site boundary. (Photo 3)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Current Environmental Site Inspection Checklist – Report No. 140121:

Chemical/Waste Management:

1. The Contractor was reminded to separate recycle and non recycle materials and disposal of properly.
2. The Contractor was reminded to provide drip trays and labels for chemical drums in the noise enclosure.

Other Observation:

3. The Contractor was reminded to clear the unknown liquid near the site boundary.

PhotoF_ 1 The storage area for rechargeable battery was locked.

PhotoF_ 2 The oil stains near drip trays were cleared.

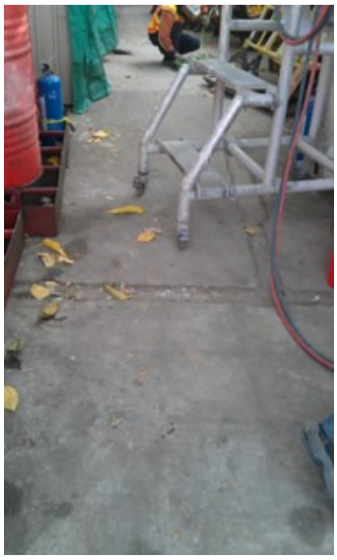

Photo 1 Non recycle materials were found in the plastic recycle bin.

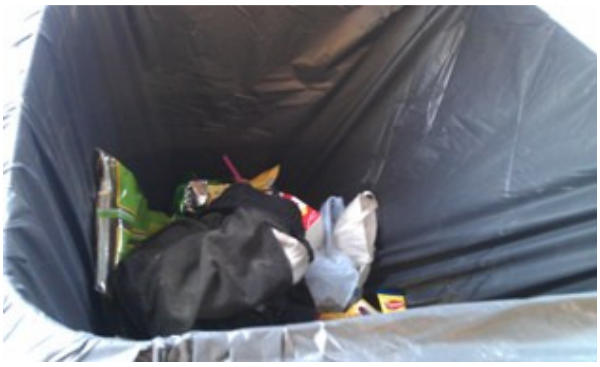

Photo 2 Chemical drums were found without chemical labels and drip trays in the noise enclosure.

Photo 3 Unknown liquid was found near the site boundary.

Wah Fu PTW

Follow up actions for previous site audit: **Previous Environmental Site Inspection Checklist – Report No. 140114** N/A
Notes / Issues Recorded On Site: **Other Observation** : 1. Oil stains were found in the access near the mobile crane. (photo 1)
Corrective Actions – Mitigation Measures Implemented or Proposed (if any): **Current Environmental Site Inspection Checklist – Report No. 140121** **Other Observation** : 1. The Contractor was reminded to clean the oil stains near the mobile crane

Photo 1 Oil stains were found in the access near the mobile crane

28 January 2014

Aberdeen PTW

Follow up actions for previous site audit: **Previous Environmental Site Inspection Checklist – Report No. 140121** 1. Cement bags in storage area were without cover since the site inspection undertaken on 26 November 2013. (Photo 1) 2. Oil leakage from a plant was found in the storage zone since the site inspection undertaken on 31 December 2013. (Photo 3)

Notes / Issues Recorded On Site:

Other Observation :

1. Water ponding was found in the abandoned washing vehicle facilities. (Photo 4)

No inspection was taken in Storage Area, so the following items will be inspected in next inspection.

Air Quality:

2. Cement bags were not covered properly. (Photo 1)

Waste / Chemical Management:

3. Unknown chemical was found inside the metal stockpiles.(photo 2)

Other Observation :

4. Oil leakage from a plant was found in the storage zone. (Photos 3)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Current Environmental Site Inspection Checklist – Report No. 140128

Other Observations :

1. The Contractor was reminded to clean up stagnant pools and prevent mosquito breeding.
2. The Contractor was reminded to clean up the waste oil and prevents oil spillage.

Waste/Chemical Management:

3. The Contractor was reminded to label the chemical drum and store it properly.

Air Quality:

4. The Contractor was reminded to cover cement bags properly.

Photo 1 Cement bags were not covered properly.

Photo 2 Unknown chemical was found near the stockpiles

Photo 3 Oil leakage from a plant was found in the storage area.

Photo 4 Water ponding was found in the abandoned washing vehicle facilities

Cyberport PTW

Follow up actions for previous site audit:

1. Cement bags were covered properly. (PhotoF_1)

Previous Environmental Site Inspection Checklist – Report No. 140121:

2. Some chemical drums were found without drip trays under the Aqua. Sedimentation tank. (Photo 1)
3. Waste water generated from concrete sampling was stored in an unsuitable container since the site inspection undertaken on 24 December 2013. The wastewater may overflow during the concrete sampling. (Photo 2)
4. The concrete wastewater was accumulated near the RE's car park since the site inspection undertaken on 31 December 2013. (Photo 3)
5. Stagnant water was found in a barrel next to the Contractor's office since the site inspection undertaken on 15 January 2014. (Photo 4)

Notes / Issues Recorded On Site:

Chemical Material Storage:

1. Some chemical drums were found without drip trays under the Aqua. Sedimentation tank. (Photo 1)

Water Quality:

2. Wastewater from concrete sampling was stored in an unsuitable container. The waste water may overflow during the concrete sampling. (Photo 2)
3. The concrete wastewater was accumulated near the RE's car park. (Photo 3)

General Housekeeping:

4. Stagnant water was found in a barrel next to the Contractor's office. (Photo 4)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Current Environmental Site Inspection Checklist – Report No. 140128:

Chemical Material Storage:

1. The Contractor was reminded to provide chemical labels and drip trays for the chemical drums under the Aqua. Sedimentation tank.

Water Quality:

2. The Contractor was reminded to treat the wastewater generated from concrete sampling prior to discharge.
3. The Contractor was recommended to clear the concrete wastewater and prevent wastewater to leak to nearby gullies.

General Housekeeping:

4. The Contractor was reminded to clear the stagnant water in the barrel next to the Contractor's office.

Photo F_1 Cement bags were covered properly.

Photo 1 Some chemical drums were found without drip trays under the Aqua. Sedimentation tank

Photo 2 Wastewater from concrete sampling was stored in an unsuitable container. The waste water may overflow during the concrete sampling.

Photo 3 The concrete wastewater was accumulated near the RE's car park.

Photo 4 Stagnant water was found in a barrel next to the Contractor's office.

Fung Mat Road Site

Follow up actions for previous site audit:

Previous Environmental Site Inspection Checklist – Report No. 140121

1. No noise label was provided for an air compressor inside the noise enclosure since the site inspection undertaken on 7 January 2014.
2. No dript trays were provided for some chemical drums near stockpiles

Notes / Issues Recorded On Site:

Noise:

1. No noise label was provided for an air compressor inside the noise enclosure. (Photo1)

Chemical Management:

2. No dript trays were provided for some chemical drums near stockpiles.(Photo 2)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Current Environmental Site Inspection Checklist – Report No. 140128

Noise:

1. According to the Contractor's information, the new air compressor was under testing and safety checking. The Contractor was reminded to provide a noise level for the air compressor.

Chemical Management:

2. The Contractor was reminded to provide drip trays for chemical drums.

Photo 1 No noise label was provided for an air compressor inside the noise enclosure.

Photo 2 No dript trays were provided for some chemical drums near stockpiles.

Sandy Bay

Follow up actions for previous site audit:

Previous Environmental Site Inspection Checklist – Report No. 140121:

1. The unknown liquid near the site boundary was removed. (PhotoF_1)

Notes / Issues Recorded On Site:

Waste / Chemical Management:

1. Non recycle materials were found in the plastic recycle bin. (Photo 1)
2. Chemical drums were found without chemical labels and drip trays in the noise enclosure. (Photo 2)

Other Observation:

3. Oil stains were found next to bund near the entrance .(Photo 3)

Corrective Actions – Mitigation Measures Implemented or Proposed (if any):

Current Environmental Site Inspection Checklist – Report No. 140128:

Chemical/Waste Management:

1. The Contractor was reminded to separate recycle and non recycle materials and disposal of properly.
2. The Contractor was reminded to provide drip trays and labels for chemical drums in the noise enclosure.

Other Observation:

3. The Contractor was reminded to clear the oil stains.

PhotoF_1 The unknown liquid near the site boundary was removed.

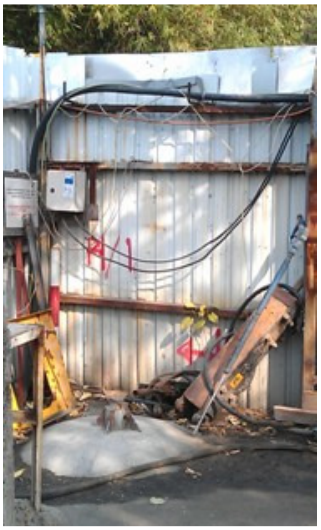

Photo 1 Non recycle materials were found in the plastic recycle bin

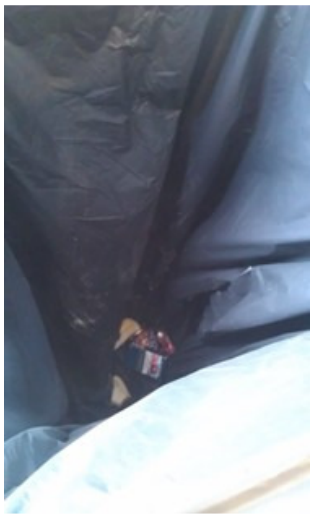

Photo 2 Chemical drums were found without chemical labels and drip trays in the noise enclosure.

Photo 3 Oil stains were found next to bund near the entrance

Wah Fu PTW

No inspection was undertaken for this week due to the Contractor arrangement

Contract No. DC/2007/24
Harbour Area Treatment Scheme Stage 2A
Construction of Sewage Conveyance System
From Aberdeen to Sai Ying Pun

Comments and Responses

Submission Title: Monthly EM&A Report No. 49(EMA/063) A

Comments	Designer (Atkins)'s Responses
Independent Environmental Checker **E-mail** **Date : 13th February 2014**	
1. **ES, 1st table, M3 night time**: Please check and update the monitoring date.	Noted and the dates were updated.
2. **Appendix G, M7a and M8 Daytime noise** Please check and update the Jan 2014 schedule to include the last monitoring date;	Noted and revised.